

Local Mitigation Strategies

The local mitigation strategies, which comprise this table, were taken from the Multi-Jurisdictional Pre-Disaster Mitigation Plan completed by the Seven Associations of Government. The strategies were developed at the local level through a grass roots effort designed and funded by the State of Utah. Local government committees headed by the county Emergency Manager were formed to develop the mitigation strategies. The strategies are based on the vulnerability assessment developed as part of the planning process by the Seven Associations of Government. Once the full list of potential projects was developed the committee prioritized the projects as high, medium, or low. For the most part the ranking was done using the STAPLEE method developed by FEMA. For more information on the method and process see the individual mitigation plans, available in the digital Appendix I.

BEAVER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Wildfire	Objective: Increase compliance with existing building and fire codes.	Problem Identification: Continuing non-compliance with existing building and fire codes.						
	Action: Develop and enforce current local, state and national codes.	HIGH	Ongoing	Local state and federal grants	Countywide	Unknown	Local state and federal agencies	Implement and enforce rules, regulations and codes.
	Objective: Reduce the threat of Wildfire in Elk Meadows, Whispering Pines and HiLo subdivision areas.	Problem Identification: Specific areas of the county are susceptible to wildland fire danger.						
	Action: Complete community fire plans for each of these areas	MED	Next fiscal year	Local	Countywide	Minimal	Local state and federal agencies	Contact Keith Parke (Five County Fire Planner)
	Objective: Reduce the threat of Wildfire in The Grove area	Problem Identification: Specific areas of the Grove in the county/city area are susceptible to wildland fire danger.						
	Action: Complete community fire plans for the Grove	MED	Next fiscal year	Local	Beaver City	Minimal	Local state and federal agencies	Contact Keith Parke (Five County Fire Planner)
Landslide	Objective: Reduce landslide impact on Hwy 153, east of Beaver.	Problem Identification: Potential landslides around upper elevations mostly by Kents Lake and Elk Meadow. Possibility of east Hwy 153 being washed out, stream damned up, etc.						
	Action: Determine hazard according to UDOT.	MED	According to UDOT.	According to UDOT funding.	Countywide	Undetermined	Undetermined	Hazard will be referred to UDOT.
	Objective: Reduce potential landslide risk on commercial and residential structures on upper elevations.	Problem Identification: Potential risk of structures in mountainous areas to be damaged by landslides.						
	Action: Assessing possibility of landslides.	MED	Undetermined	Property owner	Countywide	Unknown	Unknown	Soil surveys and other engineer surveys.
Flood	Objective: Identify flood prone areas in County.	Problem Identification: There is not enough flood information on flood areas in Beaver County to identify the problem at this time.						
	Action: Mapping of potential flood areas.	HIGH	Unknown	Undetermined	Countywide	Undetermined	State and FEMA personnel.	Contact DESHS flood map specialist.
	Objective: Reduce flooding along the Beaver River between the Grove and Highway 160	Problem Identification: The Beaver River floods between the Grove area and Highway 160						

BEAVER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Alleviate obstructions to Beaver River	MED	1-2 years	City	Beaver City	\$5,000.00	City	Clean the riverbed of trees and undergrowth
	Objective: To impound	Problem Identification: The area on the eastern boundary of Milford in the Industrial Park has flooded periodically which can impact some farms, Circle 4 Farms and Basin Perlite						
	Action: To impound flood waters if and when it leaves the river prior to reaching Milford to help recharge the	MED	5 years	Local	Milford		Local, UACD	
	Objective: To reduce flooding impact of a Minersville Dam failure due to a seismic event.	Problem Identification: Possible Impact from flooding due to a seismic event that could cause failure of Rocky Ford Irrigation Dam (Minersville Reservoir)- Multi hazard event						
	Action: Identify areas of inundation from possible failure of the Rocky Ford Irrigation Dam (Minersville Reservoir)	HIGH	Next funding year	FEMA, state and local.	Minersville	Minimal	AOG/state	Contact state GIS center (AGRC) to request a mapping study with assistance from the Five County Association of Governments
	Objective: To reduce reoccurring flooding problems along a 2½-block section of Center Street.	Problem Identification: There has been an ongoing flooding problem along Center Street within town boundaries that threatens 4 homes and 1 business						
	Action: Retain flood waters in the street	HIGH	1-5 years	FEMA, state and local.	Minersville	\$10,000.00	Town staff	Install a drainage line along Center Street
Earthquake	Objective: Have a study done to determine seismic resistance of specific structures within the county i.e. Elementary and high schools, hospitals, public buildings, high traffic areas, etc.	Problem Identification: Unknown number of seismically unsafe structures around the county.						
	Action: Structural and non-structural earthquake hazard assessment.	HIGH	Ongoing	Unknown	Countywide	Unknown	Unknown	Contact DESHS earthquake program specialist.
	Objective: Public Awareness							
	Action: Conduct pubic awareness campaign.	HIGH	Ongoing	Federal and state grants, local sources.	Countywide	Unknown	Agency personnel and volunteers.	Contact DESHS earthquake program specialist. Enhance earthquake instructions in school.
	Objective: Better community response to emergency situations							

BEAVER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Organize Community Emergency Response Teams.	HIGH	Ongoing	Federal and State grants.	Countywide	\$2000 for course	State and local personnel.	Contact the Regional Citizens Corp. Council.
	Objective: Reduce the likelihood of pipe failure due to small tremors	Problem Identification: Cast iron water pipes in 200 North on the West side of town break after a small seismic event.						
	Action: Upgrade the quality of water pipes in specific areas	HIGH	1-5 years	City	Beaver City	\$75,000.00	City	Replace existing cast iron pipes, install new bedding materials, install PVC pipe
	Objective: To maintain continuous water service to all areas of Milford	Problem Identification: Old city water lines at 200 West 600 South to 600 North break due to seismic events						
	Action: Upgrade water pipes along 200 West	HIGH	1-3 years	CIB or other grants	Milford	Unknown	City staff	Replace existing cast iron pipes, install new bedding materials, install PVC pipe
	Objective: To maintain continuous water service to all areas of Milford	Problem Identification: During small seismic events caste iron water pipes along 200 west break causing an interruption in service of culinary water to residents						
	Action: Upgrade water pipes along 200 West	HIGH	1-3 years	CIB or other grants	Minersville	Unknown	City staff	Replace existing cast iron pipes, install new bedding materials, install PVC pipe
Drought	Objective: Developing more water storage capacity in several areas in Beaver County.	Problem Identification: Inadequate Water Storage in Beaver County						
	Action: Conduct feasibility study.	MED	5 years	Unknown	Countywide	Unknown	Unknown	Contact land agencies and irrigation companies to see if studies have been done.
	Objective: Upgrading irrigation systems.	Problem Identification: Outdated irrigation systems throughout Beaver County.						
	Action: Put new hardware on the ground to improve efficiency of water	MED	Ongoing	State and Federal grants and loans.	Countywied	Unknown	NRCS, UACD, USU Extension, etc.	This is an ongoing project at this time throughout the county.
	Objective: Enforcing water law.	Problem Identification: There has not been enforcement of water law.						
	Action: Find out who is responsible to enforce the water law, then enforce it.	LOW	5 years	Unknown	Countywide	Unknown	Unknown	May start by litigation.

BEAVER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Education	Problem Identification: Lack of public awareness of efficient water usage.						
	Action: Use several ways in educating the public on efficient water usage.	HIGH	Ongoing	State and Federal grants and loans, federal program money, city and county funds, irrigation companies.	Countywide	Unknown	NRCS, UACD, USU Extension, Municipalities	Research problem areas. Create programs to make the public aware. Use newsletters and the newspapers. Hold field trips.
Severe Weather	Objective: Reduce power outages.	Problem Identification: Wind damage to property and resulting loss of power to facilities in the Milford and Beaver valleys.						
	Action: Improve infrastructures to minimize power outages.	HIGH	Ongoing	Multiple groups.	Countywide	Unknown	Private people and local utilities.	Contact utilities on current situation. Gather data on power outage, and frequency of outages.
	Objective: Reduce damage to power lines from trees and limbs that blow down in severe wind storms							
	Action: Decrease the number of trees which have limbs growing around power lines	HIGH	Ongoing	Local	Countywide	Unknown	Local Utilities	Identify trees which pose a problem, remove or trim trees that are a threat to power lines
	Objective: Reduce damage to crops and structures.	Problem Identification: Wind damage to crops and structures in the Milford valley.						
	Action: Improve conditions to reduce soil erosion.	HIGH	Ongoing	USDA government programs.	Milford	Unknown	NRCS, UACD	Encourage people to sign up for help
Insect Infestation	Objective: Have government agencies develop better control methods on federal grounds.	Problem Identification: Heavy infestations of Mormon crickets and grasshoppers south of Minersville, Bald Ridges, North of Beaver and in the Mineral Ranges.						
	Action: Improve control methods on private and federal grounds.	MED	5 years	Federal government.	Countywide	Unknown	APHIS, BLM and other federal and state agencies.	Educate private and federal landowners on control methods and more into their lifecycles.
	Action: Eradicate crickets and grasshoppers.	MED	Ongoing.	Federal government.	Countywide	Unknown	APHIS, BLM and other federal and state agencies.	

BOX ELDER COUNTY NATURAL HAZARD MITIGATION PROJECTS Bear River District Pre-Disaster Mitigation Plan 2004									
Hazard	Goal	Jurisdiction(s)	Objective	Project Description	Priority	Timeframe	Potential Funding	Estimated Cost	Resources
Multi-Hazard		All Jurisdiction	Prepare for Severe Weather Events	Become a National Weather Service “Storm Ready” Community (http://www.stormready.noaa.gov/)	Medium	2006		Minimal	NOAA
Multi-hazard		Brigham, Mantua	Protect critical infrastructure	Bury the 36” Penstock water line that carries culinary water, produces power and provide irrigation water to Brigham City.	High	2007	Local, FEMA		
Multi-hazard		Perry City	Improve emergency preparedness	CERTS training and equipment	High	2006	Local, FEMA	\$3,000-\$5,000	UDESHS, FEMA
Multi-hazard		Perry City	Protect critical infrastructure	Install electrical generators at culinary water wells.	High	2005	Local, FEMA	\$20,000	UDESHS, FEMA
Flooding		Snowville, Plymouth and Tremonton	Mitigate impacts related to flooding.	Initiate participation in the National Flood Insurance Program (NFIP) to enable home owners to purchase flood insurance.	High	2005		Minimal	UDESHS, ACOE
Flooding		Jurisdictions with identified flood hazards	Make better informed decisions.	Develop a floodplain map for communities that do not have one. Refine, update and improve existing flood plain mapping.	Medium	2009	FEMA, UDESHS, Local	\$2,500 to \$65,000 each	Consultants, FEMA, UDESHS, Public Works
Flooding		Brigham City, Perry, Willard	Minimize flood risk from canal failure or overtopping	For those not already been studied, analyze and model the canals to determine deficiencies related to present and future demands (taking into account projected storm water increases based on projected development).	Medium	2007	Local, FEMA	\$40,000	Consultants
Flooding		Perry, Willard	Minimize flooding along the base of the Willard Mountains (Perry south to Weber County Boundary).	Pearson Canyon drainage-extend storm water drain west of SR-89 to the east of the railroad tracks and eventually under the tracks to wetlands.	Medium	2005	Willard City, Willard Flood Improvement District, FEMA	\$106,100	
Flooding		Willard	Minimize flooding along the base of the Willard Mountains (Perry south to Weber County Boundary).	Pearson Canyon drainage-dike the north channel east of the Ogden-Brigham Canal to divert water to the south branch. Deepen existing detention basin and low level outlet constructed.	Medium	2007	Willard City, Willard Flood Improvement District, FEMA	\$126,000	
Flooding		Tremonton	Protect critical community facilities.	Berm around the west and north sides of the regional waste water treatment plan (similar to south and east sides). 840 feet, 3 feet high and 15	Medium	2006	Tremonton, FEMA	\$12,000	

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Hazard	Goal	Jurisdiction(s)	Objective	Project Description	Priority	Timeframe	Potential Funding	Estimated Cost	Resources
				feet wide along Malad River.					
Flooding		Honeyville	Educate citizens	Provide education and issue warnings when building permits are issued along the Bear River.	High	2004	Honeyville Town	Minimal	
Flooding		Honeyville	Educate citizens	Educate citizens and property owners along foot of Wellsville Mountains of areas of past flooding.	High	2004	Honeyville Town	Minimal	
Wildfire		Honeyville, Deweyville, Brigham City, Perry, Willard	Become “Firewise” communities.	Enact ordinance and planning procedures to insure development in fire prone areas are done wisely. Provisions for multiple access routes, firebreaks, wide roads and adequate water sources should be included. Standards for homes should be enforced that require defensible space and fire wise building materials and designs (see www.firewise.org).	High	2007		Minimal	BRAG, Utah Division of State Lands, Fire and Forestry, Utah League of Cities and Towns.
Wildfire		Honeyville	Build citizen capacity	Educate and train property owners along the foot of the Wellsville Mountains about living with wildfire threats.	High	2006	Honeyville Town	Minimal	BRAG, Utah Division of State Lands, Fire and Forestry, Utah League of Cities and Towns.
Earthquake and Landslide		All Jurisdictions	Make better informed decisions.	Improve the geologic hazard information and mapping for populated portions of the county.	Medium	2008	Utah Geologic Survey, Local	\$65,000	Utah Geologic Survey, BRAG
Earthquake and Landslide		All Jurisdictions	Avoid placing new development at risk from geologic hazards.	Develop land use ordinances that require site specific geo-hazard studies be performed prior to development permitting in areas determined to be high risk related to earthquakes (especially for critical or high-occupancy buildings).	High	2006		Minimal	Utah Geologic Survey, BRAG, Utah League of Cities and Towns.

CACHE COUNTY NATURAL HAZARD MITIGATION PROJECTS Bear River District Pre-Disaster Mitigation Plan 2004									
Hazard	Goal	Jurisdiction(s)	Objective	Project Description	Priority	Timeframe	Potential Funding	Estimated Cost	Resources
Multi-Hazard		All Jurisdiction	Prepare for Severe Weather Events	Become a National Weather Service “Storm Ready” Community (http://www.stormready.noaa.gov/)	Medium	2006		Minimal	NOAA
Multi-Hazard		All Jurisdictions	Make critical infrastructure disaster resistant.	Provide for a redundant source of electrical power in Cache Valley.	High	2007	Pacificorp, Local, Logan City, Hyrum City	YTD	Cache Chamber of Commerce, UDESHS
Flooding		Unincorporated County, Nibley City	Reduce the threat of flooding from the Blacksmith Fork River	Dredge and widen the river channel, and build up river bank at 5200 South on the parallel to Hollow Road.	High	2006	Local, FEMA	\$4,500	
Flooding		Amalga, Nibley, Paradise, Trenton	Mitigate impacts related to flooding.	Initiate participation in the National Flood Insurance Program (NFIP) to enable home owners to purchase flood insurance.	High	2005		Minimal	UDESHS, ACOE
Flooding		Jurisdictions with identified flood hazards	Make better informed decisions.	Develop a floodplain map for communities that do not have one. Refine, update and improve existing flood plain mapping.	Medium	2009	FEMA, UDESHS, Local	\$2,500 to \$65,000 each	Consultants, FEMA, UDESHS, Public Works
Flooding		All Jurisdictions with Canals	Minimize flood risk from canal failure or overtopping	For those that have not already been studied, analyze and model the canals to determine deficiencies related to present and future demands (taking into account projected storm water increases based on projected development).	Medium	2007	Local, FEMA	\$95,000	Consultants
Flooding		All Jurisdictions	Minimize flood risk from storm water runoff.	Work toward requiring all new development to accommodate its own storm water discharge on-site. Develop ordinances and standards that require new development be designed to do on-site storm water retention.	Medium	2005	Local Funds, EPA, FEMA	\$7,000 per jurisdiction	BRAG, EPA, Utah Association of Conservation Districts, FEMA, UDESHS
Flooding		Logan City	Improve Logan City’s flood management capability.	Dredge 1 st , 2 nd & 3 rd Dams. Mud and silt has built up over the years causing the settlement area to shrink.	Medium	2005	Local Funds, FEMA	Approx \$120,000 per dam	
Wildfire		Paradise, Hyrum, Wellsville, Millville, Providence, Logan, North Logan, Hyde Park, Smithfield, Mendon and Richmond	Become “Firewise” communities.	Enact ordinance and planning procedures to insure development in fire prone areas are done wisely. Provisions for multiple access routes, firebreaks, wide roads and adequate water sources should be included. Standards for homes should be enforced that require defensible space and fire wise building materials and designs (see www.firewise.org).	High	2007		Minimal	BRAG, Utah Division of State Lands, Fire and Forestry, Utah League of Cities and Towns.
Earthquake		All Jurisdictions	Make better informed	Obtain better earthquake information for local level	Medium	2008	Utah Geologic	\$45,000	Utah Geologic

CACHE COUNTY NATURAL HAZARD MITIGATION PROJECTS Bear River District Pre-Disaster Mitigation Plan 2004									
Hazard	Goal	Jurisdiction(s)	Objective	Project Description	Priority	Timeframe	Potential Funding	Estimated Cost	Resources
and Landslide			decisions.	decision makers. This work has been done for the Newton, Wellsville, Logan and Smithfield 7.5 USGS quads. Complete similar work for the Clarkston, Richmond, Trenton and Paradise 7.5 minute quads. .			Survey, Local		Survey, BRAG
Earthquake and Landslide		All Jurisdictions	Avoid placing new development at risk from geologic hazards.	Develop land use ordinances that require site specific geo-hazard studies be performed prior to development permitting in areas determined to be high risk related to earthquakes (especially for critical or high-occupancy buildings).	High	2006		Minimal	Utah Geologic Survey, BRAG, Utah League of Cities and Towns.

CARBON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
WILDLAND FIRES	OBJECTIVE: Decrease fuel potential in areas of western Carbon County	Countywide Problem Identification Wildfire can significantly impact identified areas and communities in Carbon County.						
	ACTION: Remove dead and diseased trees	HIGH	Ongoing	Private	Western Carbon County	Sale of trees will generate income		.
	OBJECTIVE: - Maintain adequate fire breaks between wildfire zones and residences in East Carbon County							
	ACTION: Secure up-to-date property mapping	HIGH	Ongoing	None	East Carbon County	Unknown	City Staff: GIS, County Assessor, Recorder	
	ACTION: Build roads between fire interface zone and residential areas	HIGH	6 Months	City Funding	East Carbon County	Unknown	City and Public Works	
	OBJECTIVE: Prevent fire hazards within city limits	Countywide Problem Identification Urban contiguous fire impacts lives and property in the County						
	ACTION: Review building codes	MEDIUM	Immediately	None	Countywide	Minimal	Local	
	ACTION: Install parapets on building tops	MEDIUM	Extended	Private	Countywide	Unknown-Variable	Local	.
DAM FAILURE	OBJECTIVE: Protect lives and property from dam failure inundation risk. Prevent or mitigate damage and loss of life from Scofield Dam failure	Countywide Problem Identification National statistics show that overtopping due to inadequate spillway design, debris blockage of spillways, or settlement of the dam crest account for 34% of all dam failures. Foundation defects, including settlement and slope instability, account for 30% of all dam failures. Piping and seepage cause 20% of national dam failures. This includes internal erosion caused by seepage, seepage and erosion along hydraulic structures, leakage through animal burrows, and cracks in the dam. The remaining 16% of failures are caused by other means.						
	ACTION: Install Remote Warning Systems	HIGH	Immediately	None	Western Carbon County	Minimal	Local	

CARBON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Maintain periodic testing of dam	HIGH	Immediate	State, Federal, Local	Western Carbon County	Unknown	Federal	
	ACTION: Build new bridge to bypass Scofield Dam Road	HIGH	Undetermined	State, Federal, Local	Western Carbon County	\$10,000,000	State and Local	
	ACTION: Construct series of dams on Lower Fish Creek	HIGH	Ongoing/Extended	Unknown	County	\$5,000,000/ea.	Contractor	
	ACTION: Construct water holding reservoir in Price Canyon	HIGH	Begin now with proposals, could take several years	Unknown	County	\$Millions	Contractor	
	OBJECTIVE: Protect lives and property from Grassy Trail Dam failure.							
	ACTION: Obtain funding for engineering, equipment and long-term system maintenance	HIGH	Unknown	Unknown	County/East Carbon/Sunnyside	Unknown	City Admin. Staff	
	ACTION: Install sensors at dam site and monitor devices at City Offices	HIGH	6 months	Federal grant	County/East Carbon/Sunnyside	Unknown	Private engineering firm will work with East Carbon and Sunnyside administration	
	ACTION: Monitor dam	HIGH	Ongoing	Unknown	County/East Carbon/Sunnyside	Unknown	City Staff	
	OBJECTIVE: Minimize safety risk and property damage to East Carbon City and Sunnyside City from dam failure							
	ACTION: Construct riprap dike on the east side of Highway 13 from northern Sunnyside City boundary to Sunnyside Park	HIGH	1 year	Federal grant	County/East Carbon/Sunnyside	Unknown	Private Construction Firm	

CARBON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Excavate wash	HIGH	1 year	Federal grant	County/East Carbon/ Sunnyside	Unknown	Private Construction Firm	
FLOODING	OBJECTIVE: Minimize safety risk and property damage to Carbon County residents due to flooding by establishing, upgrading and maintain structural control measures	Countywide Problem Identification Flooding continues to be of concern in the County and Cities and Towns within the County. The County experiences flooding during spring snowmelt and summer thunderstorm season.						
	ACTION: Build catch pond on Meads Wash	HIGH	Underway	City and Federal	County/City/ Town	\$100,000	City Staff	
	ACTION: Build catch pond on Cardinal Wash	HIGH	2 years	State, County, City	County/City/ Town	\$75,000	County	
	ACTION: Build catch pond on Grassy Trails	HIGH	2 years	State, Federal, County, City	County/City/ Town	\$30,00	County	
	ACTION: Excavate wash	HIGH	1 year	Federal grant	County/City/ Town	Unknown	Private Contractor/ City	
	ACTION: Increase culvert size on Cardinal Wash at Highway 50-6	HIGH	1 year	Federal grant	County/City/ Town	\$500,000	UDOT/	
	ACTION: Excavate wash	HIGH	1 year	Federal grant	County/City/ Town	Unknown	Private Contractor/ City	
	ACTION: Enlarge culvert at Pine Street and Edgehill Drive in Sunnyside	HIGH	1 year	Federal grant	County/City/ Town	Unknown	Private Contractor/ City	
	OBJECTIVE: Promote flood insurance throughout the County	Countywide Problem Identification Reduce economic loss due to flooding						
	ACTION: Create outreach document promoting flood insurance and include in local newspaper(s)	HIGH	1 year	Federal grant	County/City/ Town	Unknown	Private Contractor/ City	

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Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
DROUGHT	OBJECTIVE: Minimize loss of life, damage to property and disruption in commerce and governmental services caused by drought through proactive water conservation measures	Countywide Problem Identification Cyclical periods of drought place a strain on community culinary water resources						
	ACTION: Promote secondary water sources	MEDIUM	Underway	State, Federal, Local	County/City/Town	Unknown	County/City/Town	
	OBJECTIVE: Increase overall water storage capacity by building new water storage facilities							
	(Same as below)	MEDIUM	5 years	State, Federal, Local	County/City/Town	\$100,000,000	Contractor	
	ACTION: Construct dam in Willow Creek Canyon	MEDIUM	5 years	State, Federal, Local	County/City/Town	\$100,000,000	Contractor	
	OBJECTIVE: Find new water sources							
	ACTION: Update research on the possibility of “cloud seeding”	MEDIUM	Immediately	County	County/City/Town	\$100,000	Contractor	
	OBJECTIVE: Secure adequate water for culinary and agricultural needs of East Carbon and Sunnyside through structural measures							
	ACTION: Design and build silt control coffer at water inlets at Grassy Trail Reservoir to prevent buildup.	MEDIUM	1 year	Federal grant	County/City/Town	Unknown	Contractor, private engineering firms to work with cities	
	(Same as below)	MEDIUM	Unknown	Unknown	County/City/Town	Unknown	Unknown	

CARBON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Tunnel from Range Creek dam site to drop off point	MEDIUM	2 years	Federal grant	County/City/Town	\$100,000	Contractor, private engineering firms to work with cities	
	ACTION: Obtain funding to build Range Creek Dam	MEDIUM	Unknown	Unknown	County/City/Town	Unknown	City Staff	
	ACTION: Construct Range Creek Dam	MEDIUM	5 years	Federal grant	County/City/Town	\$10,000,000	Contractor, private engineering firms to work with cities	
LANDSLIDE	OBJECTIVE: Minimize loss of life, damage to property and disruption in residents, commerce and governmental services caused by landslides through structural measures	Countywide Problem Identification There is a potential risk to structures located in areas identified Federal and state agencies and depicted in GIS as landslide risk areas						
	ACTION: Build retaining fences and momentum absorbers along highways	LOW	5 years	Federal, State, Local	County/City/Town	\$1,000,000	UDOT	
	ACTION: Dislodge large rocks along highways	LOW	Immediate	Federal, State, Local	County/City/Town	\$100,000	UDOT	
	ACTION: Build retaining walls on residencies identified as at risk	LOW	5 years	Individual	County/City/Town	Variable	Unknown	
	ACTION: Develop pathways to capture falling rocks adjacent to residences	LOW	5 years	Federal, State, Local	County/City/Town	\$100,000	City and County	
PROBLEM SOILS	OBJECTIVE: Protect roadways	Countywide Problem Identification Problem soils are a risk to property and life due to its volatility						
	ACTION: Increase width of slope adjacent to roadways	LOW	Extended	Federal, State, Local	County/City/Town	Unknown	State, County, City	
	ACTION: Educate homeowners about problem soil risk	LOW	2 years	Local	County/City/Town	\$3000	City and County	

CARBON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Monitor and control water on alkali soils	LOW	Ongoing	Local	County/City/Town	\$3000	City and County	
INFESTATION	OBJECTIVE: Control insects and birds	Countywide Problem Identification Infestation of noxious insects and bird species can impact the health, safety, and welfare of the County and its residents						
	ACTION: Insecticide spray	LOW	Ongoing	Local	County/City/Town	\$100,000	City and County	
	ACTION: Remove dead and diseased trees	LOW	Extended	Private	County/City/Town	Trees will be harvested by commercial enterprise	Private	
	ACTION: Control pigeon population	LOW	Undetermined	Federal, State, Local	County/City/Town	\$15,000	City and County	
SEVERE WEATHER	OBJECTIVE: Protect County from adverse affects of severe weather	Countywide Problem Identification Snowstorms, summer thunderstorms, hail, and high wind over eastern Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologist.						
	ACTION: Participate in Storm Ready Program at the County level	MEDIUM	2 years	State and Federal	County/City/Town	Unknown	City and County LEPC Emergency Management	Set up within the County Emergency Management and encourage all cities to participate, all requirements of the NWS Storm Ready Program.

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	ACTION: Encourage avalanche preparedness in County backcountry areas	MEDIUM	1 year	Federal, State, Local	County/City/Town	\$15,000	City and County Emergency Management	Avalanches and avalanche preparedness are not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry. While avalanche terrain is mainly on USFS land the search and rescue for the lost individual is more often than not coordinated by emergency managers with search parties comprised of county and city staff. Introductory avalanche awareness training could lessen the costs to Carbon County and the cities within the County. Most avalanche victims die in avalanches started by themselves or someone in their party. Education can limit the number of avalanche related searches each year.
	ACTION: Assess Emergency Operations Centers (EOC’s) to ensure they are grounded for lightning, to include buildings with towers, etc.	MEDIUM	2 - 3years	Federal grant	County/City/Town	Unknown	City and County Emergency Management	Proposed alternate Command Centers (Public Works, Public Utilities), Sheriff’s Dispatch, Command Vehicles and associated equipment need to be protected from severe weather events including lightning.
HAZARDOUS MATERIALS	OBJECTIVE: Protect lives and property from hazardous materials spills.	Countywide Problem Identification Highway 6 is one of the main arteries going east and west in the State. In most places this is a two-lane highway that experiences numerous accidents and hazardous material incidents.						

CARBON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Work with County LEPC to help identify hazardous materials traffic on Highway 6	MEDIUM	Ongoing	Federal grants	Countywide	Unknown	City and County Emergency Management/LEPC/State HMI	

DAGGETT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Dam Failure	Objective: Use technology to aid in prevention of flood loss due to dam failure							
	Action: Digitize high hazard dam failure inundation maps	MED	Ongoing	State	Countywide	\$500 dollars per dam	UUtah Dam Safety Section, and AGRC	Numerous technological advancements have been made which will help reduce the likely hood of dam failure and reduce the risk to town stream populations should a dam fail. These techniques will only reduce the risk if they are properly understood and implemented. The above mitigation recommendations when implemented will represent a first step into this new technology for Daggett County. The county understands there are additional technologic steps that can be taken such as increase number of telemeter snow and stream gauges. Look for these advances in future revisions to the mitigation plan.
	Action: Update Emergency Operations Plan to include GIS dam failure estimates	MED	Next EOP update	County	Countywide	Undetermined	County GIS and Emergency Manager	
	Action: Educate the local elected officials, developers, and citizens.	MED	2 years	County	Countywide	Undetermined	County Employees	
	Action: Updated Emergency Action Plans (EAP) and integration with GIS Systems.	MED	Ongoing	FEMA, State and Local	Countywide	Unknown	State and Local	
	Action: Implementation of more debris dams would assist in controlling floods, reducing the amount of debris and mud that come through. Maintenance of flood control pools in existing dams would also be very beneficial.	MED	Ongoing	Town and County funds	Countywide	Minimal	Water surveyor and newsletter editor	
Drought	Objective: Conserve culinary water by educating the public.							
	Action: The Local LEPC will hold meetings semi-annually to educate the public on the need to be water wise.	HIGH	Ongoing	County	Countywide	Minimal	Water surveyor and newsletter editor	Use a newsletter to educate the public
	Objective: Develop more water storage tanks within the County.							
	Action: Conduct a feasibility study.	HIGH	Ongoing	Town and County funds	Countywide	Unknown	Water surveyor and newsletter editor	

DAGGETT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Install new wheel lines to improve efficiency of water.	HIGH	Ongoing	Federal, and State funding	Countywide	Unknown	NRCS, UACD, USU, Extension, ect.	
	Action: Implement and enforce water laws that prohibit the use of extensive amounts of water.	HIGH	Ongoing	Town and County funds	Countywide	Unknown	Water surveyor and newsletter editor	
	Objective: Meet current and future water needs of community. Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	Action: Develop additional water storage tanks as well as implement conservation plans.	HIGH	Ongoing	Town funds, State and Federal Government loans and/or grants	Manila	TBD	Manila Town Staff, Professional Services, and Contractors	
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	Town and County funds	Manila	Minimal	Water surveyor and newsletter editor	The Town should continue to maintain and implement a tiered water rate structure.
Earthquake	Objective: Provide for emergency response and relief	Problem Identification: Transportation and utilities services could be severely impacted.						
	Action: Identify and maintain critical transportation and utility services	MED	Ongoing	Local governments and possible grants	Countywide	Unknown-Determined by the extent of damage anticipated.	Town staff.	Critical transportation systems
	Action: Conduct a public awareness campaign.	MED	Ongoing	Local governments and possible grants	Countywide	Unknown	Agency personnel and volunteers	Contact DESHS earthquake program specialist. Enhance earthquake instructions in school.
	Objective: Have a study done to determine seismic resistance of structures within the county i.e. Elementary and high schools, public buildings, high traffic areas, ECT.	Problem Identification: Unknown number of seismically unsafe structures around the county.						

DAGGETT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Structural and non-structural earthquake hazard assessment.	HIGH	Ongoing	Unknown	Countywide	Unknown	Unknown	Critical transportation systems
Flood	Objective: Design master storm drainage plans for residential areas	Problem Identification: Control flooding in residential areas of Daggett County, Including but not limited to the Town of Manila and the unincorporated Dutch John. Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Set horizontal and vertical survey control and order aerial photography with contours for each residential area in the county.	HIGH	Ongoing	Local, State and Federal grants	Countywide	Unknown	State, Local, and possibly Federal	Aerial Topography is needed for master storm drainage design.
	Action: Design master storm drainage plans to handle storm water runoff through residential areas.	HIGH	3 months to 2 years, (depending on number of areas worked on)	Grants	Countywide	\$10,000.00 per residential area, depending on size	County Staff and contracted staff.	Engineers design master storm drainage plans for the residential areas.
	Objective: Implement storm drainage plans throughout the residential areas of Daggett County.							
	Action: Provide information to the public on how the storm drainage plans will assist in preventing flood damage to the residents of Daggett County.	HIGH	2 years or as soon as the storm drainage plans are finished.	State and Federal grants	Countywide`	Unknown, will depend on the finals plans and what is required for facilities	County and contracted staff	Construct storm drainage facilities and require all new developments to meet county storm drainage plans.
	Objective: Use technology to aid in prevention of flood loss due to canal failure.	Problem Identification: This unlined earthen canal has failed before causing damage to the KOA camp ground on the Western edge of Manila.						
	Action: Daggett County and the Town of Manila will form a partnership with the current owners of the Sheep Creek Canal. In doing so, this will enable them to work together in the lining or piping of portions of the canal as funding becomes available.	HIGH	Ongoing	FEMA, state and local.	Manila	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: Put in an application to the Army Corps. Of Engineers for updated and revised flood plain maps for the populated areas in Daggett County.	HIGH	Within the next two years	FEMA, state and local.	Countywide	Unknown	County and Town Employees, Local Volunteers	

DAGGETT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Place a restrictive clause in the County and Town Ordinances that will prohibit any new development in the County floodplain.	HIGH	Within the next year	FEMA, state and local.	Countywide	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: Place a restrictive clause in the County and Town Ordinances that will prohibit any undercutting of the canal.	HIGH	Within the next year	FEMA, state and local	Countywide	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: educate the public on Canal maintenance and repair.	HIGH	Ongoing	FEMA, state and local.	Countywide	Unknown at this time	County and Town Employees, Local Volunteers	Past and future flooding
	Action: County and Town building inspectors and the planning committee will implement a maintenance and inspection schedule in coordination with the owners of the canal.	HIGH	Ongoing	FEMA, state and local.	Countywide	Unknown at this time	County and Town Employees, Local Volunteers	Past and future flooding
	Action: County and Town building inspectors and planning committee will make sure that the Zoning Ordinance is up-dated or revised every 5 to 6 years.	HIGH	Ongoing	FEMA, state and local.	Countywide	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: The County Emergency Managers will research grant opportunities for potential funding.	HIGH	Ongoing	FEMA, state and local.	Countywide	Unknown at this time	County staff	
	Action: Implement a flood ordinance that will cover the County and Town with flood insurance.	HIGH	Ongoing	FEMA, state and local.	Countywide	Unknown at this time	County and Town Employees, Local Volunteers	
Insect Infestation	Objective: Reduce the impact of insects	Problem Identification: South and west sides of Daggett County are vulnerable to Mormon cricket and Cutworm infestations as well as some mosquito problems.						

DAGGETT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Spread insect bait and spray for mosquitoes	HIGH	When required	Town and County funds, Mosquito abatement funds come from property tax	Countywide	Approximately \$3.00 per property owner per month	County Mosquito Abatement District	
	Objective: Reduce the severity of infestations							
	Action: The County has applied for a \$6,000.00 grant to assist in purchasing 4 Mosquito magnets, propane tanks to run the magnets and to assist in salaries for the county employees to maintain the magnets.	HIGH	Spring and summer of 2004	\$6,000.00 in grants	Countywide	\$6,000.00	County employees	Several agricultural fields surround Daggett County; these fields have been subjected to insect infestation especially during the recent years of drought.
	Objective: Reduce the threat of West Nile Virus within Daggett County							
	Action: Educate the public on the importance of vaccinating their animals.	HIGH	Spring and summer of 2004	State and local funding	Countywide	\$6,000.00	County employees	Several of the Daggett County residents have horses that could be affected by the West Nile virus.
	Objective: Reduce the severity of infestations	Problem Identification: Periodic Grasshopper infestations tend to be more severe on the edge of the developed town area and in the fields surrounding the town.						
	Action: Conduct aerial spraying to reduce infestations.	HIGH	As infestations occur	By private individuals in most cases		Varies, depending on acreage treated	Contractor	Many agricultural fields surround Daggett County and the Town of Manila. These fields have been subjected to insect infestation especially during the recent years of drought.
Landslide	Objective: Reduce potential landslide risk on highway 44 in areas of known landslide potential.	Problem Identification: There is a potential risk to pedestrians and vehicle traffic due to the Carter Creek rockslides, which are located in areas identified by the county as landslide risk areas.						
	Action: Assess the probability of landslides and identify specific structures at risk	HIGH	Undetermined	Property owner	Carter creek landslide	Unknown	Unknown	Soil surveys and other engineering surveys are needed.

DAGGETT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Coordinate with all government agencies’ that would assist in sloping of the hillside near Carter Creek. The county will need to contact the following agency’s on the possibility of implementing some kind of protective netting or fencing that would eliminate the rock’s from tumbling down on to Highway 44.	HIGH	Undetermined	Unknown	Daggett County Carter Creek	Unknown	Unknown	Soil surveys and other engineering surveys are needed.
	Action: The county’s and town’s planning committee will review and update the zoning ordinances within the County and Town to make sure that individuals are not constructing new homes near potential landslide areas.	HIGH	Undetermined	Unknown	Unknown	Unknown	Unknown	Hold monthly planning and zoning meetings within the town and county.
Severe Weather	Objective: Reduce damage to structures through strict adherence to building codes	Problem Identification: Daggett experiences occasional, damaging high winds and snowstorms.						
	Action: Ensure that 80 MPH wind load requirement is met by builders	HIGH	Ongoing	Fees from building permits	Countywide	Minimal	Building inspector	Adherence to building code requirement for tying roof structures to supporting walls will minimize damage from high wind events
	Objective: Reduce service disruptions and damage to power lines	Problem Identification: Power lines are at risk from seasonal high winds.						
	Action: Provide adequate clearances for power lines and conduct ongoing line maintenance. Maintain outage plan.	HIGH	Ongoing	Possible grants	Manila	Minimal	County and town employees	Extreme winds have occurred, utilities disruption has occurred in past years due to damage to power poles and transmission lines by high winds.
Wildfire	Objective: Increase compliance with existing building and fire codes.	Problem Identification: Continuing non-compliance with existing building codes and fire codes.						
	Action: Develop and enforce current local, state and national codes	HIGH	Ongoing	Local, state and federal grants	Countywide	Unknown	Local, state and federal agencies	Implement and enforce rules, regulations and codes
	Objective: Educate homeowners on how to reduce risk of wildfire damage							

DAGGETT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: The local LEPC will provide semi-annual training for the citizens of Daggett County and the Town of Manila.	HIGH	Starting 2004	State and local	Manila	Minimal	County	Educate the public on how to reduce the risk of wildfires.

DAVIS COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Earthquake	Objective: Provide education on seismic hazards and mitigation, to Davis County residents and homeowners.	Problem Identification: Davis County is located in the heart of the Wasatch Fault between the shores of the Great Salt Lake and the foothills of the Wasatch Mountain Range. The majority of the population lives within 5 miles of the fault. The only major traffic artery running north and south, and numerous water and petroleum pipelines either cross over or run within ½ mile of the fault. 5 moderately sized petroleum refineries located in the south end of the county are subject to severe damage from ground movement and liquefaction. A major earthquake in the area would result in 100’s of millions of dollars in damage to residential structures, industry, and of critical infrastructure, not to mention some loss of life.						Provide information to residents and business owners to encourage them to take appropriate measures to make homes and businesses less susceptible to damage from ground shaking. Education pertaining to earthquakes will be part of a holistic natural hazards education program, including wildfires, flooding, sever weather, and landslides.
	Action: Public Education	HIGH	Immediate	LEPC	Countywide	\$2500.00	LEPC Membership	
	Objective: Increase quality and quantity of available natural hazards data to facilitate better decision-making.							Provide updated, detailed maps to city and county planning groups, emergency managers, and public to assist them in making educated decisions by understanding earthquake danger zones.
	Action: Update fault zone and liquefaction maps for the county	MED	Two years	Undetermined, potentially USGS or UGS	Countywide	Minimal	USGS Staff	
Earthquake	Objective: Provide fire department with building that meet current construction codes, ensuring response capability of fire apparatus and personnel after an earthquake.	Problem Identification: A number of critical structures, which contain fire apparatus within the county do not meet current building criteria and could sustain considerable damage or suffer total destruction from ground shaking. These building exist in Clinton, South Weber and Layton.						
	Action: Retrofit or construct new fire department buildings	HIGH	4 Years	Grants and city budgets	Countywide, targeting Clinton City, South Weber, and Layton City.	\$8 million	Contract	Refer to “Clinton City Fire Station Structural Analysis” for more information regarding the vulnerability assessment of the Clinton City fire station.
Wildfire	Objective: Increase the level of wildfire knowledge for home and business owners in the Urban Wildland Interface area.	Problem Identification: Much of the inhabitable land within Davis County is on the east bench. Numerous homes and subdivisions have been and are being constructed in these areas. Many of these structures border the Forest Service boundary or are in areas of old scrub oak growth. The potential for catastrophic damage from wildfire increases yearly.						

DAVIS COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Public awareness and education	HIGH	Immediate	LEPC	Targeting county URWIN communities	Minimal	LEPC membership, UFFSL, National Forest Service	This project is part of a holistic natural hazard education campaign within Davis County. Wildfire education will instruct on the principles of defensible space in coordination with the Utah Living With Fire Committee. Homeowners in the foothills abutting the Wasatch National Forest, along with other identified URWIN communities will be targeted.
	Action: Provide wildfire training to city and county planning and zoning officials and staff.	HIGH	Immediate	LEPC	Countywide	Minimal	LEPC membership, UFFSL, DES, National Forest Service.	City and county planners need to understand issues related to wildland fire fighting, such as water and access, in order of properly plan for development of lands in the urban/wildland interface.
Wildfire	Objective: Re-establish effective firebreaks.	Problem Identification: In much of the county, there is little, if any, natural break between wildland Forest Service areas and residential areas. There are some old roads and “fire breaks” that are in ill repair, or have not been maintained for years. They have become ineffective as fire breaks and hazardous to fire apparatus.						
	Action: Widen and stabilize the firebreak between Farmington Canyon and Bountiful.	HIGH	Immediate	Grant, County budget, and Forest Service	Farmington, Bountiful, Centerville and unincorporated county developments along the Wasatch National Forest Boundary.	\$200,000	County Public Works, Wasatch National Forest staff	This project is already in the planning stage. As funding is confirmed the project will commence.

DAVIS COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Widen and stabilize the firebreak north of Farmington Canyon to the Weber River.	HIGH	2 years	Grants, County Budget, and Forest Service	Farmington, Fruit Heights, and unincorporated county development along the Wasatch National Forest Boundary.	\$500,000	County Public Works, Wasatch National Forest staff.	This area is considerably longer, but is almost entirely within existing forest service boundaries. This may result in a less aggressive project; however, some widening and stabilization can be accomplished.
Flooding	Objective: Increase the level of understanding in homeowners through education programs.	Problem Identification: The potential for flooding due to spring runoff, and especially from summer thunderstorms, is high in certain areas of the county. Existing flood plain maps do not indicate areas of flooding potential that exist, in large part due to development, that are not near creeks and the Great Salt Lake. Also not addressed is are the Weber Basin Irrigation Water Aqueduct and canals that are a potential source of flooding.						
	Action: Public education and awareness.	HIGH	Immediate	LEPC	Countywide	Minimal	LEPC Membership	This information and awareness campaign will be part of a holistic education campaign addressing the all-natural hazards, which will include all Davis County residents.
	Objective: Reduce loss of life and property damage due to flooding by providing current building code and NFIP maps to cities.							
	Action: Encourage city planners to update building codes.	HIGH	Immediate	None	Countywide	Minimal	LEPC Membership	There is evidence that not all cities in the county use updated code information concerning building of home and other structures in areas prone to flooding.
	Action: Update the county flood plain maps and include contour lines.	HIGH	One year	Federal Grants	Countywide	Unknown	DES, county personnel	Based on federal funding State DES in planning to start a flood plain map revision and update process this coming year. With cooperation from the county, we will request contour lines be added to these maps to give a realistic idea of where flooding may occur in other than historically flooded areas.

DAVIS COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Flood	Objective: Lessen the impacts of flood damage caused by irrigation canal failure.							
	Action: Inspect irrigation canals.	MED	3 Years	Weber Basin Water District, Federal Grants	Communities with in Davis County down slope from Weber Basin Irrigation pipeline	Unknown	Weber Basin Water District, Contractors	Aging agriculture irrigation canals are prevalent throughout Davis county. As farming lands is converted to residential and businesses the farming infrastructure remains, supplying water to remaining farmers. The canals can break inundating down slope property.
Landslide	Objective: Educating planning commissions.	Problem Identification: The east bench of Davis County is home to numerous canyons, large and small. They were, of course, formed over thousands of years by debris flows and mudslides. Now, many hundreds of homes and other structures, pipeline, power lines, and roadways have been constructed on top of or through the alluvial fans produced by these events. Nature is not done constructing these canyons. Landslides and debris flows will continue to occur over time, thus threatening residents and critical infrastructure.						
	Action: Provide city-planning commissions with information concerning landslides and debris flows.	HIGH	One year	Unknown	Countywide	Minimal	LEPC Members	The Utah Geologic Survey will review geology reports submitted to counties and cities when requested. Additional the UGS can aid in writing geologic hazard ordinances. The city of Layton in Davis County has adopted geologic ordinances.
	Action: Encourage cities to adopt a standard of requiring geo-technical studies in identified landslide and debris flow areas.	HIGH	One year	Unknown	Countywide	Minimal	LEPC Members	
	Objective: Reduce loss of life and damage to property by providing a means to control debris and water from debris flows.	Problem Identification: There are a number of canyons that do not currently have debris basin constructed to contain debris flows. Others are insufficient in size. These need to be built or reconstructed in order to provide protection to residents. In addition, Weber Basin Water District maintains a large irrigation pipeline running from the mouth of Weber Canyon to east Bountiful. Any event that caused a break in the line would result in massive flooding due to the fact that there are no valves in the system.						
	Action: Construct additional Debris Basins and retrofit others.	MED	5 years	Federal grants, County funding, City funding	Countywide developments and future developments on alluvial fans in Davis County.	Estimated Cost: \$10 million	County public works, city public works, contractors	Barnard Creek and other projects yet to be determined.
	Objective 2.2: Lessen the impacts of flood damage caused by irrigation canal failure.							

DAVIS COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Place check valves in the Weber Basin irrigation pipeline.	MED	3 years	Weber Basin Water District, Federal Grants	Communities with in Davis County down slope from Weber Basin Irrigation pipeline	\$400,000	Weber Basin Water District, Contractors	Placing valves at strategic locations that can be automatically shut in the event of a break would result in less flood damage.
Severe Weather	Objective: Assist residents protect themselves from the affects of severe weather.	Problem Identification: Most presidential disaster declarations are the result to severe weather. Davis County is prone to the affects of severe weather as are many other counties in the state. These are usually thunderstorms and snowstorms. However, we are also prone to extremely severe wind events referred to as “East Winds.” Historically, Davis County has experienced gusts of over 110 mph and sustained winds of 80+ mph. These can result in millions of dollars in damage. On average we experience at least one every year. Severe storms result in secondary and tertiary problems mostly dealing with power, heating and travel. Davis County has only one main north/south roadway thru the county. Severe weather has resulted and will continue to result in serious travel problems, as well as power and heating difficulties.						
	Action: Have all cities in the county participate in the Storm Ready program.	HIGH	1 year	City and county budgets	Countywide	\$1,000.00	City and county Emergency Managers	Set up within the county emergency management and encourage all cities to participate, all requirements of the National Weather Service Storm Ready program.

DAVIS COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Encourage avalanche preparedness for county backcountry users.	HIGH	1 year	Unknown	Countywide	Minimal	City and county Emergency Managers, State Hazard Mitigation Team members, Utah Avalanche Forecast Center.	Avalanches and avalanche preparedness is not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry. While the avalanche terrain is mainly on US Forest Service land the search and rescue for the lost individual in more often than not coordinated by emergency managers with search parties comprised of county and city staff. Introductory avalanche awareness training could lessen the costs to Davis County and the cities within the county. Most avalanche victims die in avalanches started by themselves or someone in there party. Thus, education can limit the number of avalanche related searches each year.
Severe Weather	Objective: Harden communications capabilities to ensure post event functionality.	Problem Identification: As mentioned above, high winds can result in serious problems throughout the county. Communications for emergency responders have been severely hampered in the past by damage to communication infrastructure.						
	Action: Reinforce towers and infrastructure	MED	2 years	To be determined	Countywide	Unknown	UCAN, city and county personnel	
	Action: Establish alert and notification procedures/system to notify emergency responders, flood control, and emergency managers.	MED	1 year	Unknown	Countywide	Minimal	Emergency Management	Set up alert and notification groups within UNIS and City Watch.

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Dam Failure	Objective: Use technology to aid in prevention of flood loss due to dam failure	Problem Identification: Reduce down stream loss in Duchesne County due to dam failure.						Numerous technological advancements have been made which will help reduce the likely hood of dam failure and reduce the risk to down stream populations should a dam fail. These techniques will only reduce the risk if they are properly understood and implemented. The above mitigation recommendations when implemented will represent a first step into this new technology for Duchesne County. The county understands there are additional technologic steps that can be taken such as increase number of telemeter snow and stream gauges. Look for these advances in future revisions to the mitigation plan.
	Action: Digitize high hazard dam failure inundation maps	HIGH	Ongoing	State government	Countywide	500 dollars per dam	Utah Dam Safety Section, and AGRC	
	Action: Update Emergency Operations Plan to include GIS dam failure estimates	HIGH	Next EOP update	County	Countywide	Undetermined	County GIS and Emergency Manager	
	Action: Educate the local elected officials, developers, and citizens.	HIGH	Within the next two years	County	Countywide	Minimal	County employees	
	Action: Updated Emergency Action Plans (EAP) and integration with GIS Systems.	HIGH	Ongoing	FEMA, State and Local	Countywide	Unknown	State and Local	
	Action: Implementation of more debris dams would assist in controlling floods, reducing the amount of debris and mud that come through. Maintenance of flood control pools in existing dams would also be very beneficial.	HIGH	Ongoing	Town and County funds	Countywide	Minimal	Water surveyor and newsletter editor	
Drought	Objective: Conserve culinary water by educating the public	Problem Identification: Current, past and future drought issues within Duchesne County.						
	Action: Educate the public on the need to be water wise	HIGH	Ongoing	County funding	Countywide	Minimal	Water surveyor and newsletter editor	Use a newsletter to educate the public
	Objective: Develop more water storage tanks within the County							
	Action: Conduct a feasibility study	HIGH	Ongoing	County funds	Countywide	Minimal	Water surveyor and newsletter editor	

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Install new wheel lines to improve the water efficiency.	HIGH	Ongoing	Federal, and State funding	Countywide	Unknown	NRCS, UACD, USU, Extension, ect.	
	Action: Implement and enforce water laws that prohibit the use of extensive amounts of water.	HIGH	Ongoing	County funds	Countywide	Unknown	Water Surveyor and newsletter	
	Objective: Meet current and future water needs of community. Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	Action: Develop additional water storage tanks as well as implement conservation plans.	HIGH	Ongoing	Town funds, State and Federal Government loans and/or grants	Altamont	To be determined	Altamont Town Staff, Professional Services, and Contractors	
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	Town and County funds	Altamont	Minimal	Water surveyor and newsletter	The Town should continue to maintain and implement a tiered water rate structure.
	Objective: Meet current and future water needs of community. Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	Action: Develop additional water storage tanks as well as implement conservation plans.	HIGH	Ongoing	City funds, State and Federal Government loans and/or grants	Duchesne City	Unknown	City Staff, Professional Services, and Contractors	
	Objective: Conserve culinary water by conservation							
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	City and County funds	Duchesne City	Minimal	Water surveyor and newsletter editor	The City should continue to maintain and implement a tiered water rate structure.
	Objective: Meet current and future water needs of community. Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Develop additional water storage tanks as well as implement conservation plans.	HIGH	Ongoing	City funds, State and Federal Government loans and/or grants	Myton City	Unknown	Myton City Staff, Professional Services, and Contractors	
	Objective: Conserve culinary water by conservation							
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	City and County funding	Myton City	Minimal	Water surveyor and newsletter	The City should continue to maintain and implement a tiered water rate structure.
	Objective: Meet current and future water needs of community. Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	Action: Develop additional water storage tanks as well as implement conservation plans.	HIGH	Ongoing	City funds, State and Federal Government loans and/or grants	Roosevelt City	To be determined	Roosevelt City staff, Professional Services, Contractors	
	Objective: Conserve culinary water by conservation							
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	City and County funds	Roosevelt City	Minimal	Water surveyor and newsletter editor	The City should continue to maintain and implement a tiered water rate structure.
	Objective: Meet current and future water needs of community. Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	Action: Develop additional water storage tanks as well as implement conservation plans.	HIGH	Ongoing	Town funds, State and Federal Government loans and/or grants	Tabiona	Unknown	Tabiona Town Staff, Professional Services, and Contractors	
	Objective: Conserve culinary water by conservation							

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	Town and County funds	Tabiona	Minimal	Water surveyor and newsletter editor	The Town should continue to maintain and implement a tiered water rate structure.
Earthquake	Objective: Provide for emergency response and relief.	Problem Identification: Transportation and utilities services could be severely impacted.						
	Action: Identify and maintain critical transportation and utility services.	HIGH	Ongoing	Local governments and possible grants	Countywide	Unknown-Determined by the extent of damage anticipated.	County staff	Critical transportation systems
	Objective: Public Awareness							
	Action: Conduct a public awareness campaign.	HIGH	Ongoing	Local governments and possible grants	Countywide	Unknown	Agency personnel and volunteers	Contact DESHS earthquake program specialist. Enhance earthquake instructions in school.
	Objective: Have a study done to determine seismic resistance of structures within the county i.e. Elementary and high schools, public buildings, high traffic areas, ECT.	Problem Identification: Unknown number of seismically unsafe structures around the county.						
	Action: Structural and non-structural earthquake hazard assessment.	HIGH	Ongoing	Unknown	Countywide	Unknown	Unknown	
Flooding	Objective: Obtain Aerial photography with contours of each residential area in Duchesne County.	Problem Identification: Control flooding in residential areas of Duchesne County, Including but not limited to the Town of Altamont, Duchesne City, Roosevelt City, and the town of Tabiona.						
	Action: Set horizontal and vertical survey control and order aerial photography with contours for each residential area in the county.	HIGH	Ongoing	Local, State and Federal grants	Countywide	Unknown	State, Local, and possibly Federal	Aerial Topography is needed for master storm drainage design.
	Objective: Design master storm drainage plans for residential areas.							
	Action: Design master storm drainage plans to handle storm water runoff through residential areas.	HIGH	3 months to 2 years, (depending on number of areas worked on)	Grants	Countywide	\$10,000.00 per residential area, depending on size	County Staff and contracted staff.	Engineers design master storm drainage plans for the residential areas.

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Implement storm drainage plans throughout the residential areas of Duchesne County.							
	Action: Implement storm drainage plans throughout the residential areas of Duchesne County.	HIGH	2 years or as soon as the storm drainage plans are finished.	State and Federal grants	Countywide	Unknown, will depend on the finals plans and what is required for facilities	County and contracted staff	Construct storm drainage facilities and require all new developments to meet county storm drainage plans.
	Objective: Use technology to aid in prevention of flood loss.	Problem Identification: Control flooding in the Town of Altamont. Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Put in an application to the Army Corps. Of Engineers for updated and revised flood plain maps for the town of Altamont.	HIGH	Within the next two years	FEMA, state and local.	Altamont	Unknown	County and Town Employees, Local Volunteers	
	Action: Place a restrictive clause in the Town Ordinances that will prohibit any new development in the floodplain.	HIGH	Within the next year	FEMA, state and local.	Altamont	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: Town building inspectors and the planning committee will revise and update building ordinances for new construction that takes place to help eliminate bridges and buildings from being washed away.	HIGH	Ongoing	FEMA, state and local.	Altamont	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: Town building inspectors and planning committee will make sure that the Zoning Ordinance is up-dated or revised every 5 to 6 years.	HIGH	Ongoing	FEMA, state and local.	Altamont	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: The County Emergency Managers will research grant opportunities for potential funding.	HIGH	Ongoing	FEMA, state and local.	Altamont	Unknown at this time	County and Town Employees, Local Volunteers	

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Implement a flood ordinance that will cover the County and Town with flood insurance.	HIGH	Ongoing	FEMA, state and local.	Altamont	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: Implement a zoning ordinance to ensure that manufactured homes are being installed properly and inspected.	HIGH	Ongoing	FEMA, state and local.	Altamont	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: Enforce Zoning laws.	HIGH	Ongoing	FEMA, state and local.	Altamont	Unknown at this time	County and Town Employees, Local Volunteers	Past and future flooding
	Objective: Use technology to aid in prevention of flood loss.	Problem Identification: Control flooding in Duchesne City. Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Put in an application to the Army Corps. Of Engineers for updated and revised flood plain maps for the Duchesne City.	HIGH	Within the next two years	FEMA, state and local.	Duchesne City	Unknown	County and City Employees, Local Volunteers	
	Action: Place a restrictive clause in the City Ordinance that will prohibit any new development in the floodplain.	HIGH	Within the next year	FEMA, state and local.	Duchesne City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: County and City building inspectors and the planning committee will revise and update building ordinances for new construction that takes place to help eliminate bridges and buildings from being washed away.	HIGH	Ongoing	FEMA, state and local.	Duchesne City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: County and City building inspectors and planning committee will make sure that the Zoning Ordinance is up-dated or revised every 5 to 6 years.	HIGH	Ongoing	FEMA, state and local.	Duchesne City	Unknown at this time	County and City Employees, Local Volunteers	

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: The County Emergency Managers will research grant opportunities for potential funding.	HIGH	Ongoing	FEMA, state and local.	Duchesne City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Implement a flood ordinance that will cover the County and City with flood insurance.	HIGH	Ongoing	FEMA, state and local.	Duchesne City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Implement a zoning ordinance to ensure that manufactured homes are being installed properly and inspected.	HIGH	Ongoing	FEMA, state and local.	Duchesne City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Enforce Zoning laws.	HIGH	Ongoing	FEMA, state and local.	Duchesne City	Unknown at this time	County and City Employees, Local Volunteers	
	Objective: Use technology to aid in prevention of flood loss.	Problem Identification: Control flooding in Myton City. Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Put in an application to the Army Corps. Of Engineers for updated and revised flood plain maps for the Myton City.	HIGH	Ongoing	FEMA, state and local.	Myton City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Place a restrictive clause in the City Ordinance that will prohibit any new development in the floodplain.	HIGH	Within the next year	FEMA, state and local.	Myton City	Unknown at this time	County and City Employees, Local Volunteers	

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: County and City building inspectors and the planning committee will revise and update building ordinances for new construction that takes place to help eliminate bridges and buildings from being washed away.	HIGH	Ongoing	FEMA, state and local.	Myton City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: County and City building inspectors and planning committee will make sure that the Zoning Ordinance is up-dated or revised every 5 to 6 years.	HIGH	Ongoing	FEMA, state and local.	Myton City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: The County Emergency Managers will research grant opportunities for potential funding.	HIGH	Ongoing	FEMA, state and local.	Myton City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Implement a flood ordinance that will cover the County and City with flood insurance.	HIGH	Ongoing	FEMA, state and local.	Myton City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Implement a zoning ordinance to ensure that manufactured homes are being installed properly and inspected.	HIGH	Ongoing	FEMA, state and local.	Myton City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Enforce Zoning laws.	HIGH	Ongoing	FEMA, state and local.	Myton City	Unknown at this time	County and City Employees, Local Volunteers	
	Objective: Use technology to aid in prevention of flood loss.							
	Action: Put in an application to the Army Corps. Of Engineers for updated and revised flood plain maps for the Roosevelt City.	HIGH	Within the next two years	FEMA, state and local.	Roosevelt City	Unknown	County and City Employees, Local Volunteers	

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Place a restrictive clause in the County and City Ordinances that will prohibit any new development in the floodplain.	HIGH	Within the next two years	FEMA, state and local.	Roosevelt City	Unknown	County and City Employees, Local Volunteers	
	Action: County and City building inspectors and the planning committee will revise and update building ordinances for new construction that takes place to help eliminate bridges and buildings from being washed away.	HIGH	Ongoing	FEMA, state and local.	Roosevelt City	Unknown	County and City Employees, Local Volunteers	
	Action: County and City building inspectors and planning committee will make sure that the Zoning Ordinance is up-dated or revised every 5 to 6 years.	HIGH	Ongoing	FEMA, state and local.	Roosevelt City	Unknown	County and City Employees, Local Volunteers	
	Action: The County Emergency Managers will research grant opportunities for potential funding.	HIGH	Ongoing	FEMA, state and local.	Roosevelt City	Unknown	County and City Employees, Local Volunteers	
	Action: Implement a flood ordinance that will cover the County and City with flood insurance.	HIGH	Ongoing	FEMA, state and local.	Roosevelt City	Unknown	County and City Employees, Local Volunteers	
	Action: Enforce Zoning laws.	HIGH	Ongoing	FEMA, state and local.	Roosevelt City	Unknown	County and City Employees, Local Volunteers	
	Objective: Use technology to aid in prevention of flood loss.							
	Action: Put in an application to the Army Corps. Of Engineers for updated and revised flood plain maps for the town of Tabiona.	HIGH	Within the next two years	FEMA, state and local.	Tabiona	Unknown	County and City Employees, Local Volunteers	

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Place a restrictive clause in the County and Town Ordinances that will prohibit any new development in the floodplain.	HIGH	Ongoing	FEMA, state and local.	Tabiona	Unknown	County and City Employees, Local Volunteers	Past and future flooding
	Action: County and town building inspectors and the planning committee will revise and update building ordinances for new construction that takes place to help eliminate bridges and buildings from being washed away.	HIGH	Ongoing	FEMA, state and local.	Tabiona	Unknown	County and City Employees, Local Volunteers	
	Action: County and town building inspectors and planning committee will make sure that the Zoning Ordinance is up-dated or revised every 5 to 6 years.	HIGH	Ongoing	FEMA, state and local.	Tabiona	Unknown	County and City Employees, Local Volunteers	
	Action: The County Emergency Managers will research grant opportunities for potential funding.	HIGH	Within the next two years	FEMA, state and local.	Tabiona	Unknown	County and City Employees, Local Volunteers	
	Action: Implement a flood ordinance that will cover the County and Town with flood insurance.	HIGH	Ongoing	FEMA, state and local.	Tabiona	Unknown	County and City Employees, Local Volunteers	
	Action: Implement a zoning ordinance to ensure that manufactured homes are being installed properly and inspected.	HIGH	Ongoing	FEMA, state and local.	Tabiona	Unknown	County and City Employees, Local Volunteers	
	Action: Enforce Zoning laws.	HIGH	Ongoing	FEMA, state and local.	Tabiona	Unknown	County and City Employees, Local Volunteers	
Insect Infestation	Objection: Reduce the impact of insects	Problem Identification: Duchesne County has experienced losses in agriculture, livestock, and wildlife as a result of insect infestation.						

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Spread insect bait and spray for mosquitoes	HIGH	When required	Town and County funds, Mosquito abatement funds come from property tax.	Countywide	Approximately \$3.00 per property owner per month	County Mosquito Abatement District	
	Objective: Reduce the severity of infestations							
	Action: Apply for grants to purchase Mosquito magnets and propane tanks to run the magnets.	HIGH	Spring and summer of 2004	\$6,000.00 in grants	Countywide	\$6,000.00	County employees	Several agricultural fields surround Duchesne County; these fields have been subjected to insect infestation especially during the recent years of drought.
	Objective: Reduce the threat of West Nile Virus within Duchesne County							
	Action: Educate the public on the importance of vaccinating their animals.	HIGH	Spring and summer of 2004	State and local funding	Countywide	Minimal	County employees	Several of the Duchesne County residents have horses that could be affected by the west nile virus.
	Objective: Reduce the severity of infestations	Problem Identification: Periodic Grasshopper infestations more severe in the rural areas of Duchesne County.						
	Action: Conduct aerial spraying to reduce infestations.	HIGH	As infestations occur	By private individuals in most cases	Countywide	Varies, depending on acreage treated	Contractor	Many agricultural fields surround Duchesne County. These fields have been subjected to insect infestation especially during the recent years of drought.
Landslide	Objective: Reduce potential landslides to residential and commercial areas.	Problem Identification: There is a potential risk to residential and commercial buildings due to rockslides, which are located in areas identified by the county as landslide risk areas.						
	Action: Assess the probability of landslides and identify specific structures at risk	HIGH	Undetermined	Property owner	Countywide	Unknown	Unknown	Soil surveys and other engineering surveys are needed.
	Action: The county's, city's and town's planning committee will review and update the zoning ordinances within the County to make sure that individuals are not constructing new homes near potential landslide areas.	HIGH	Undetermined	Property owner	Countywide	Unknown	Unknown	Hold monthly planning and zoning meetings within the town and county.

DUCHESNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Reduce potential landslides to residential and commercial areas.	Problem Identification: In Duchesne County there are several areas namely Indian Canyon, Ravola Dugway, and Wolf Creek Pass that could have a potential risk to pedestrians and vehicle traffic due to landslides.						
	Action: Assess the probability of landslides and identify specific structures at risk	HIGH	Undetermined	Property owner	Countywide	Unknown	Unknown	
Severe Weather	Objective: Reduce damage to structures through strict adherence to building codes	Problem Identification: Duchesne County experiences occasional, damaging high winds and snowstorms.						
	Action: Ensure that 80 MPH wind load requirement is met by builders	HIGH	Ongoing	Fees from Building permits	Countywide	Minimal	Building Inspector	Adherence to building code requirement for tying roof structures to supporting walls will minimize damage from high wind events
	Objective: Reduce service disruptions and damage to power lines	Problem Identification: Power lines are at risk from seasonal high winds.						
	Action: Provide adequate clearances for power lines and conduct ongoing line maintenance. Maintain outage plan.	HIGH	Ongoing	Possible Grants	Countywide	To be determined	County and town employees	Extreme winds have occurred, utilities disruption has occurred in past years due to damage to power poles and transmission lines by high winds.
Wildfire	Objective: Increase compliance with existing building and fire codes.	Problem Identification: Continuing non-compliance with existing building codes and fire codes.						
	Action: Develop and enforce current local, state and national codes	HIGH	Ongoing	Local, state and federal grants	Countywide	Unknown	Local, state and federal agencies	Implement and enforce rules, regulations and codes
	Objective: Educate homeowners on how to reduce risk of wildfire damage	Problem Identification: Specific areas of the county are susceptible to wildland fire danger.						
	Action: The local LEPC will provide semi-annual training for the citizens of Duchesne County.	HIGH	Starting 2004	State and local	Countywide	Minimal	County staff	Educate the public on how to reduce the risk of wildfires.

EMERY COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
DAM FAILURE	OBJECTIVE: Obtain and evaluate accurate and up-to-date inundation maps for all major dams in the County	Countywide Problem Identification Orangeville and Castle Dale are directly downstream from Joe’s Valley Dam and the communities of Cleveland, Elmo Town, (Green River City uses water from the Green River) and Huntington, as well as the bulk of northern Emery County can also be directly impacted from dam failure due to inevitable water shortages. Ferron City is directly downstream from Millsite Reservoir. Current cam inundation maps may not reflect risk. County should have central location for maps and review on a regular basis.						
	ACTION: Obtain funding for engineering evaluation of current dam inundation maps.	MEDIUM	Next five years	State and Federal grants, dam safety program	Countywide	Dependent on extend of evaluation	Contractors, BOR State Dam Safety	Evaluation of current dam inundation maps is essential for warning and notification systems
	OBJECTIVE: - Maintain Communication/Warning Systems for dam failure							
	ACTION: Evaluate existing warning systems for dam failure	MEDIUM	Next two years	County and State grants	Countywide	Unknown/Minimal	BOR, Dam Engineers, County Emergency Management	Evaluation of current communication and warning systems can be view as a baseline for future warning and communication needs.
	ACTION: Install additional warning systems where needed	MEDIUM	Next five years	Unknown	Countywide	Unknown	County, BOR, State Dam Safety	Development and funding of existing warning systems to include: sirens, reverse 911, satellite phones, and “call down tree”
	ACTION: Establish evacuation routes for dam failure	MEDIUM	2 years	None	Countywide	Minimal	County Sheriff, City Police, County Emergency Management	Identified evacuation routes will assist in response to dam failure and help educate public on evacuation measures.
	OBJECTIVE: Develop public information on dam failure to include evacuation routes and sheltering plans							

EMERY COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Identify and maintain access and egress routes and sheltering plans	MEDIUM	Immediate	None	Countywide	Minimal	County Sheriff, City Police, County Emergency Management, School District	Include a map of identified routes for evaluation purposes on County website and in City and County public buildings.
	ACTION: Establish agreements for emergency shelters	MEDIUM	Immediate	None	Countywide	Minimal	County Emergency Management, Red Cross, School District	Pre identifying shelters will assist in evacuation process
DROUGHT	OBJECTIVE: Reduce excessive water used for landscaping	Countywide Problem Identification Limited water supplies, increasing population and several years of drought place a strain on availability of community culinary water resources and water storage						
	ACTION: Develop and enforce policies to limit the amount of area that can be used as water-intensive landscaping	HIGH	Ongoing	Minimal	Countywide	To be determined	County and Special Service District (CVSSD) or Water Districts	(Manila is in Dagget County. Not part of our AOG. Perhaps this is a reference to the West side of the county?).
	OBJECTIVE: Develop more water storage tanks in several areas in the county							
	ACTION: Conduct feasibility study.	HIGH	5 years	Grants	Countywide	Unknown	Unknown	Water storage is always an issue in times of drought. The ability to adequate store water lessens the impact in areas of the county

EMERY COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	OBJECTIVE: Upgrade irrigation systems.	Countywide Problem Identification Earthen irrigation systems throughout the county.						
	ACTION: Improve canal to reduce losses to evaporation and leakage.	MEDIUM	Unknown (depends on funding)	State and Federal grants and loans	Countywide	Unknown	NRCS, UACD, USU Extension, etc. Irrigation Company	Several years of drought and a need for water conservation
	ACTION: Install field sprinkler systems (pressurized, secondary lines)	MEDIUM	Ongoing	Private	Countywide	Unknown	Private with assistance from Federal agencies	Better usage of agricultural water
	OBJECTIVE: Educate the public on efficient water usage	Countywide Problem Identification Lack of public awareness of efficient water usage.						
	ACTION: Use several ways in educating the public on efficient water usage.	HIGH	Ongoing	State, Federal grants, city and county funds, irrigation companies	Countywide	Minimal	LEPC, County, Cities and Towns	Create programs to make the public aware. Use newsletters and the newspapers
EARTHQUAKE	OBJECTIVE: Study the seismic resistance of critical structures within the county, i.e., Elementary school, high schools, public buildings, and highways	Countywide Problem Identification Emery County is the site of at least two active faults. Both are located on the western border of the county in Joe's valley and are named the Joe's Valley Fault. Joe's Valley appears to be highly vulnerable to such an event and an earthquake-induced failure of the dam would put Orangeville and Castle Dale in jeopardy. An updated analysis is needed to evaluate earthquake faults and subsequent risk of damage to buildings and infrastructure in the county.						
	ACTION: Structural and non-structural earthquake hazard assessment	MEDIUM	3 to 4 years	Federal grant	Countywide	Unknown	Unknown	Contact DESHS earthquake program specialist. Several seismographic tests have been done within the county most likely for oil.
	OBJECTIVE: Public Awareness	Countywide Problem Identification Residents uneducated about earthquakes.						

EMERY COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Conduct public awareness campaign. Enhance earthquake instructions in school	MEDIUM	Ongoing	Federal and state grants, local sources	Countywide	Minimal	LEPC, volunteers and school administration	Contact DESHS earthquake program specialist.
FLOOD	OBJECTIVE: Identify additional flood prone areas in county	Countywide Problem Identification There is not enough current information on flood areas in Emery County to identify the problem at this time.						
	ACTION: Evaluate need for additional County flood mapping of potential flood hazard areas	MEDIUM	Unknown	FEMA	Countywide	Undetermined	State and FEMA personnel	Contact DESHS flood map specialist.
	ACTION: Participate in the FEMA Flood Map Modernization Program	MEDIUM	Ongoing	FEMA	Countywide	Some cost share	County Emergency Management and State Floodplain Office	Emery County has areas that should be reevaluated for flood hazards. Town of Cleveland and City of Green River have indicated their current flood map does not reflect the flood hazard and boundaries are inconsistent
	OBJECTIVE: Reduce the threat of flood from canal failures in the county	Countywide Problem Identification Unstable canals are a flood threat						
	ACTION: Perform technical analyses on irrigation canals	MEDIUM	Ongoing	Unknown	Countywide	Unknown	Private, County Engineer	Private canals and irrigation systems have proven to breach, fail, or flood.
	OBJECTIVE: - Promote purchase of flood insurance	Countywide Problem Identification Participation in the NFIP allows citizens to mitigate flood damage through purchasing of flood insurance. Residents are not aware flood insurance is available. Communities are not aware of flood damage prevention ordinance that are in place for development in floodplains						

EMERY COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Obtain outreach materials on flood insurance.	MEDIUM	Immediately	None	Countywide	Printing of FEMA documents	County and City Floodplain Administrator, County Emergency Management	Flood insurance is an effective mitigation measure
	OBJECTIVE: Educate local LEPC committees and elected officials (no Floodplain Administrators in AOG area) on floodplain compliance							
	ACTION: Make training available on flood compliance and NFIP	MEDIUM	1 year	None	Countywide	None	County and City (no Floodplain Administrators in AOG area)Building Officials, Planning and Zoning, State Floodplain Managers	Contact State Floodplain Manager and arrange training.
	ACTION: Develop pathways to capture falling rocks adjacent to residences	LOW	5 years	Federal, State, Local	County/City/Town	\$100,000	City and County	
SEVERE WEATHER	OBJECTIVE: Protect County from adverse effects of severe weather	Countywide Problem Identification Winter storms, summer thunderstorms, flash floods hail, and high winds over eastern Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists						
	ACTION: Participate in the Storm Ready program at the county level	HIGH	2 years	State and Federal	Countywide	Unknown	City and County LEPC Emergency Management	Set up within the County Emergency Management and encourage all cities to participate, all requirements of the NWS Storm Ready Program

EMERY COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Encourage avalanche preparedness for county backcountry users	HIGH	1 year	Local State	Countywide	Minimal	County Emergency Management, State Hazard Mitigation Team, Utah Avalanche Forecast Center	Avalanches and avalanche preparedness are not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry. While the avalanche terrain is mainly on US Forest Service land the search and rescue for the lost individual in more often than not coordinated by emergency managers with search parties comprised of county and city staff. Introductory avalanche awareness training could lessen the costs to Emery County and the cities within the county. Most avalanche victims die in avalanches started by themselves or someone in there party. Thus, education can limit the number of avalanche related searches each year
	ACTION: Assess Emergency Operations Centers EOC’s to ensure they are lightning - grounded, to include buildings with towers	HIGH	2-3 years	Federal Grants	Countywide	Unknown	County Emergency Management	Alternate EOC(s), Sheriff’s Dispatch, Command Vehicle(s)and associated equipment need to be protected from sever weather events including lightning
LANDSLIDE	OBJECTIVE: Minimize loss of life, damage to property and disruption in residents, commerce and government services caused by landslides through structural measures	Countywide Problem Identification There is a potential risk to structures located in areas identified by Federal and state agencies and depicted in GIS as landslide risk areas						
	ACTION: Build retaining fences and momentum absorbers along highways prone to landslide and rockfalls, including Highway 29 and Highway 10	LOW	5 years	Federal, State, Local	Countywide	\$1,000,000	UDOT, County Road Dept.	Federal, State, Local

EMERY COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Dislodge large rocks along highways	LOW	Immediate	Federal, State, Local	Countywide	Variable	Unknown	Protect homes in areas at risk
	ACTION: Develop pathways to capture falling rocks adjacent to residences	LOW	5 years	Federal, State, Local	Countywide	\$100,000	City, County, Towns	Identify areas that could accommodate pathways
PROBLEM SOILS	OBJECTIVE: Protect roadways	Countywide Problem Identification Problem soils are a risk to property and life due to its volatility.						
	ACTION: Increase width of slope adjacent to roadways	LOW	Extended	Federal, State, and Local	Countywide	Unknown	State, County, City	Allows for buffer
	ACTION: Educate homeowners about problem soil risk	LOW	2 years	Local	Countywide	\$3,000	Local	County Building Official should have information available to citizens
	ACTION: Identify, monitor and control water on alkali soils.	LOW	Ongoing	Local	Countywide	Unknown	Local	Identifying areas of concern will help with planning.
INFESTATION	OBJECTIVE: Control insects.	Countywide Problem Identification Infestation of noxious insects and can impact the health, safety and welfare of County and its residents.						
	ACTION: Utilize insecticide spray	LOW	Ongoing	Federal, State. Local	Countywide	Unknown	State, Federal, Local	Insect abatement districts and federal insect control should be coordinated
	ACTION: Remove dead and diseased trees	LOW	Extended	Private	Countywide	Trees will be harvested by commercial enterprise	Private	This could be a part of the fire management program and limited spread of infestation

GARFIELD COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Wildfire	Objective: Increase compliance with existing building ad fire codes	Problem Identification: Continuing non-compliance with existing building codes and fire codes.						
	Action: Develop and enforce current local, state and national codes	HIGH	Ongoing	Local, State and Federal grants		Unknown	Local, State and Federal agencies	Implement and enforce rule, regulations and codes
	Objective: Educate homeowners on how to reduce risk of wildfire damage	Problem Identification: Approximately 20 homes are at risk from wildfire						
	Action: Conduct an education program on reducing wildfire risks	HIGH	Ongoing	City and County	Panquitch	Minimal	Fire Chief and State Fire Warden	Educate homeowners using newsletters and personal contacts of importance of clearing combustibles from perimeters of their homes
	Objective: Reduce threat of utilities interruption due to wildland fire	Problem Identification: Fire is a threat to power facilities and transmission lines						
	Action: Safeguard facilities and poles		Ongoing	Local	Hatch	Undetermined	Task Force	Power and telephone transmission lines in Hatch travel via overhead lines through many developed and undeveloped areas. A wildland fire could disrupt services to customers by igniting poles or arcing. Facilities and transmission lines need to be evaluated and plans implemented to safeguard facilities and poles. Plans must be developed it isolate affected areas and maintain services to customers.
	Objective: Reduce threat of damage to a wildland fire	Problem Identification: Wildfire is a threat to the west and south side of the City						
	Action: Conduct an education program on reducing wildfire risks	HIGH	Ongoing	City and County	Tropic	Minimal	Fire Chief and State Fire Warden	Educate homeowners using newsletters and personal contacts of the importance of clearing combustibles from perimeters of their homes
	Objective: Reduce threat of damage due to a wildland fire	Problem Identification: Wildfire is a threat to the community						

GARFIELD COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Educate the residents of the community on how to make their properties fire safe	HIGH	Periodic	City and County	Cannonville	Minimal to Town	Town Staff, County Fire	Educate homeowners using newsletters and personal contacts of the importance of clearing combustibles from perimeters of their homes.
	Objective: Reduce threat of damage due to a wildland fire	Problem Identification: Wildfire is a threat due to grasslands drying out during extending dry periods.						
	Action: Educate residents of the value of maintaining firebreaks around their homes	HIGH	Periodic	Local	Henrieville	Minimal	City and County	During extended dry periods the grasslands dry out and represent a potential fire hazard
	Objective: Reduce threat of damage due to a wildland fire	Problem Identification: Wildfire is a threat due to grasslands drying out during extended dry periods.						
	Action: Thin or remove vegetation causing exposure problem	HIGH	1 year	Moderate, no local funds	Escalante	Moderate	City and County	During extended dry periods the grasslands dry out and represent a potential fire hazard
	Objective: Reduce threat of damage due to a wildland fire	Problem Identification: Power facilities and telephone poles are at greatest risk from wildfire.						
	Action: Thin vegetation along river or create a fire break to protect nearby facilities	HIGH	Ongoing	Moderate, local funds	Boulder/Antimony	Moderate	County and Cities	The dense Boulder Creek bottom cover provides an ideal location for a wildfire. To reduce or eliminate exposure to structures, redundant communications systems should be installed to provide necessary coverage.
Landslide	Objective: Reduce potential landslide risk on commercial and residential structures in areas of known landslide potential	Problem Identification: There is a potential risk to structures located in areas identified in the FCAOG GIS as landslide risk areas						
	Action: Assess the probability of landslides and identify specific structures at risk	HIGH	Undetermined	Property Owner	Countywide	Unknown	Unknown	Soil surveys and other engineering surveys are needed.
	Objective: Provide for a second means of supplying culinary water to residents within Cities and Towns of Garfield County	Problem Identification: There is a low risk, but potential for landslide or land movement to impact water supply systems.						

GARFIELD COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Establish and maintain a means to readily connect the City and Town’s culinary water users to alternative water sources.	MED	Undetermined	Local governments and possible grants and loans	Countywide	To be determined	Panguitch City	In case City/Town’s water supply is damaged, the communities would need to connect to emergency means. Use of water would need to be curtailed to essential services only.
Flood	Objective: Obtain aerial photography with contours for identified residential areas in Garfield County to assist in flood risk identification.	Problem Identification: Control flooding in unincorporated residential areas of Garfield County. Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Set horizontal and vertical survey control and order aerial photography with contours for each identified residential area in the County	HIGH	3 months to 2 years, depending on number in areas	Local, State and Federal grants	Countywide	\$700 per residential area, depending on size	County staff and Contractor	Aerial photography is needed in the development of Master Storm Drainage design.
	Objective: Design Master Storm Drainage Plans for residential areas in the County							
	Action: Design Master Storm Drainage Plan to handle storm water runoff	HIGH	3 months to 2 years, depending on number of areas worked on	Grants	Countywide	\$10,000 per residential area, depending on size	County Staff and Contractor	Engineers design Master Storm Drainage Plans for residential areas for flooding.
	Objective: Develop a comprehensive storm drainage plan for Garfield County							
	Action: Implement storm drainage plans throughout the residential areas of Garfield County	HIGH	3 years plus, as soon as Plans are completed	State and Federal grants	Countywide	Unknown, will depend on final plans and requirement of facilities and structures.	County and Contractor	Construct storm drainage facilities and require all new developments to meet County storm drainage plan(s)
	Objective: Implement storm drainage plans through out residential areas of Garfield County.	Problem Identification: Control flooding in unincorporated residential areas of Garfield County. Flooding occurs from heavy rains and fast moving thunderstorms.						

GARFIELD COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Implement storm drainage plans throughout the residential areas of Garfield County	MED	2 years	State and Federal grants	Countywide	Unknown, will depend on final plans and what facilities are required	City and Contractor	Construct storm drainage facilities and require all new developments to meet County storm drainage plan(s).
	Objective: Encourage 100% participation in the National Flood Insurance Program (NFIP).	Problem Identification: Flood insurance is not promoted actively promoted in the County.						
	Action: Assist Town of Antimony in joining NFIP	HIGH	1 year	None required	Countywide	None	County Emergency Management, County Floodplain Administrator, State Floodplain Manager	The Town of Antimony has mapped Special Flood Hazard Areas (SFHAs), but does not participate in the NFIP. Flood insurance is not available in the community
	Objective: Promote flood insurance throughout the County							
	Action: Create outreach document promoting flood insurance and include in local newspaper(s), libraries, and other public buildings.	HIGH	1 year	Minimal		Unknown	County Floodplain Administrator, State Floodplain Manager, DES	General public is usual not aware they can purchase flood insurance.
Earthquake	Objective: Provide for emergency response and relief	Problem Identification: Transportation and utilities services could be severely impacted by an earthquake affecting emergency response and relief activities						
	Action: Identify and maintain critical transportation and utility services	MED	Ongoing	Local governments and possible grants	Countywide	Unknown	County Public Works, County Emergency Management, UDOT, Utilities	Critical transportation and utility systems need to be maintained

GARFIELD COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Raise awareness of problems and risk associated with earthquakes	Problem Identification: There is a high probability of rockfall caused by seismic events and possible liquefaction along river systems.						
	Action: Maintain adherence to Land Use Codes and restriction to building in identified sensitive areas	MED	Immediate and ongoing	None		None	County, City and Town Building Officials and staff	Problem associated with falling rocks can be identified in areas along Paria River, Escalante River, Calf Creek, Boulder Creek.
	Objective: Reduce threat to public safety during an earthquake	Problem Identification: Damage to residential structures and public facilities is likely during a seismic event						
	Action: Retrofit inadequate construction	MED	Long term	Private	Countywide	Expensive	County, City and Town Building Officials and Engineers, Contractors	Old inadequate construction in buildings, un-reinforced masonry, should be mitigated.
	Objective: Educate community on earthquake damage prevention practices	Problem Identification: Lack of public awareness about earthquake damage prevention practices						
	Action: Produce and/or distribute handouts and provide inspections to identify shortcomings in earthquake preparedness	MED	2 year	Unknown, possible grants	Countywide	Unknown	County Emergency Management, DES	Having a community educated on earthquake damage prevention practices will ensure greater safety for its residents.
	Objective: Educate community on disaster preparedness and response							
	Action: Continue to support CERT Programs	MED	2 year	State and Federal grants	Countywide	\$25,000	County Emergency Management, DES	CERT is proactive measure to educate public on earthquake hazard and community response to an event.
Drought	Objective: Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on community culinary water resources.						
	Action: Educate the public on the need to be water wise	MED	Ongoing	State grants, County funds	Countywide	Minimal	Water districts, County, State	Newsletter developed to educate general public on conserving water
	Objective: Conserve culinary water by conservation							

GARFIELD COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Maintain and enforce rate policies that encourage water conservation	MED	Ongoing	State grants, County funds	Countywide	Minimal	Water districts, County, State	Evaluate the use of a tiered water rate structure.
	Objective: Meet current and future water needs of the community	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary and irrigation water resources.						
	Action: Develop additional source and storage as well as implement conservation plans	HIGH	Ongoing	State and Federal grants/loans, County funds	Countywide	To be determined	Water districts, County, State, Contractors	Garfield County has experienced several years of drought conditions. To meet the needs of the community’s residential and business water users, vigilance is locating new and additional sources as well as increasing storage capacity to meet current needs as well as future need is a must.
	Objective: Conserve culinary water by conservation							
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	State grants, County funds		Minimal	Water districts, County, State	Evaluate the use of a tiered water rate structure.
Severe Weather	Objective: Protect County from adverse affects of severe weather	Problem: Snowstorms, summer thunderstorms, flash floods, hail, and high winds over central Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists						
	Action: County participation in the StormReady program.	HIGH	2 Year	State and Federal	Countywide	Unknown	City and County Emergency Management	Set up within the county emergency management and encourage all cities to participate, all requirements of the National Weather Service StormReady program.

GARFIELD COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Encourage avalanche preparedness for county backcountry users.	HIGH	1 Year	Minimal	Countywide	Minimal	County Emergency Management State Hazard Mitigation Team members, Utah Avalanche Forecast Center.	Avalanches and avalanche preparedness is not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry. While the avalanche terrain is mainly on US Forest Service land the search and rescue for the lost individual is more often than not coordinated by emergency managers with search parties comprised of county and city staff. Introductory avalanche awareness training could lessen the costs to Sanpete County and the cities within the county. Most avalanche victims die in avalanches started by themselves or someone in there party. Thus, education can limit the number of avalanche related searches each year.
	Action: Assess EOCs to ensure they are grounded lightning, to include buildings with towers, etc.	HIGH	2-3 years	Federal Grants	Countywide	Unknown	County Emergency Management	Alternate EOCs, Sheriff’s Dispatch, Command Vehicle(s)and associated equipment need to be protected from severe weather events including lightning.
Insect Infestations	Objective R32.1 Reduce the impact of insects	Problem Identification: Western Garfield County is occasionally vulnerable to Mormon Cricket and Cutworm infestations as well as some mosquito problems						
	Action: Spread insect bait and spray for mosquitos	LOW	When required	City and County funds, abatement taxes	Countywide	Approximately \$3.00/property owner/month	County Mosquito Abatement District	Insect infestation impacts agriculture as well as communities

GRAND COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
FLOODING	OBJECTIVE Continue to support and update Storm Water Management Plan	Countywide Problem Identification The rapid development of the county has caused a need to re-evaluate the system and establish a plan and level of service to manage stormwater. Development also directly impacts the historical drainage ways with culverts roads and structures						
	ACTION: Review and revise Storm Water Management Plan as development warrants	HIGH	Ongoing	County and impact fees	Countywide	Depends on extend of identified projects within the Plan	County, Private Contractors	The Storm Water Management Plan has protected the County from flood losses. This Plan also contains identified storm water basins and other structural control projects
	OBJECTIVE: Encourage 100% participation in the National Flood Insurance Program (NFIP).	Problem Identification: Flood occurs primarily from spring snowmelt in the higher elevations and summer flash flooding. Identifying and then controlling flooding will assist in responding to flood events. Protection of life and property before, during, and after a flooding event is essential.						
	OBJECTIVE: Promote flood insurance throughout the County							
	ACTION: Create outreach document promoting flood insurance and include in local newspaper(s), libraries, and other public buildings	HIGH	1 Year	Minimal	Countywide	Unknown	County Engineer, State Floodplain Manager, DES	General public is usually not aware they can purchase flood insurance
	OBJECTIVE: Reduce threat of unstable canals throughout the County. Identify county-wide canal systems							
	ACTION: Map and assess canal systems in the County for structural integrity	HIGH	3-5 years	Federal Grants	Countywide	Unknown	County Engineer, Public Work, County Information and Technology, County Emergency Management	Private and public canals are used for transportation and dispersion of water as well as flood control

GRAND COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	OBJECTIVE: Ensure Emergency Operations Centers (EOC(s)) are equipped to respond to flooding							
	ACTION: Obtain communication equipment that will allow for timely response to flooding	HIGH	1 year	Federal Grants	Countywide	\$30,000	County Sheriff, County Emergency Management	Adequate communication capabilities are essential between all response agencies within the County.
	OBJECTIVE: Support updating of flood hazard data							
	ACTION: Support and encourage participation in the NFIP Flood Map Modernization Program	HIGH	Ongoing	Federal	Countywide	Unknown	County Engineer, State Floodplain Manager	Accurate flood maps assist the County in the administration of the NFIP and better reflects flood risk within the County. County must join the NFIP to be able to participate in Map Mod.
SEVERE WEATHER	OBJECTIVE: Protect County from adverse effects of severe weather	Countywide Problem Identification Snowstorms, summer thunderstorms, hail, and high winds over southeastern Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists						
	ACTION: Participate in the Storm Ready program at the county level	HIGH	2 years	State and Federal	Countywide	Unknown	City and County Emergency Management	Set up within the county emergency management and encourage all cities to participate, all requirements of the National Weather Service Storm Ready program

GRAND COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Encourage avalanche preparedness for county backcountry users in the northeastern portion of the County	HIGH	1 year	State and Federal	Countywide	Minimal	County Emergency Management State Hazard Mitigation Team members, Utah Avalanche Forecast Center.	Avalanches and avalanche preparedness are not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry. While the avalanche terrain is mainly on US Forest Service land the search and rescue for the lost individual in more often than not coordinated by emergency managers with search parties comprised of county and city staff. Introductory avalanche awareness training could lessen the costs to Grand County. Most avalanche victims die in avalanches started by themselves or someone in there party. Thus, education can limit the number of avalanche related searches each year
	ACTION: Assess Emergency Operation Centers (EOC’s) to ensure they are lightning-grounded, to include buildings with towers, etc.	HIGH	2-3 years	Federal Grants	Countywide	Unknown	County Emergency Management	EOC’s and alternate EOC’s, Sheriff’s Dispatch, Command Vehicle(s)and associated equipment need to be protected from severe weather events including lightning
SLOPE FAILURE (LANDSLIDE AND DEBRIS FLOW)	OBJECTIVE: Reduce potential landslide risk on commercial and residential structures in areas of known landslide potential.	Countywide Problem Identification There is a potential risk to structures located in areas identified by SEUALG GIS affiliates as landslide risk areas.						
	ACTION: Assess the probability of landslides and identify specific structures at risk	MEDIUM	Undetermined	Property Owner	Countywide	Unknown	Unknown	Soil surveys and other engineering surveys are needed.

GRAND COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	OBJECTIVE: Remove risk to homes by removing rocks.	Problem Identification: Rockfall may impact structures within the County						
	ACTION: Remove large rocks overhanging existing developments.	MEDIUM	Undetermined	Not applicable	Countywide	Not applicable	City, County Planning	Developments should include removal or remediation of large rock areas from being dislodged by earthquake or rains
	ACTION: Remove potential rock hazards prior to building homes	MEDIUM	5 years	None	Countywide	Unknown	Planning Depts.	Prior to building, require builder/owner to secure or remove possible rock hazards
EARTHQUAKE	OBJECTIVE: Provide for emergency response and relief	Countywide Problem Identification Although there is a limited impact to earthquakes, there is an opportunity to evaluate transportation and utilities services could be impacted from secondary effects of earthquake						
	ACTION: Identify and maintain critical transportation and utility services	LOW	Ongoing	Local governments and possible grants	Countywide	Unknown, determined by extent of damage anticipated	County and City Staff	Critical transportation, utility and communications systems need to be maintained.
DROUGHT	OBJECTIVE: Conserve culinary water by educating the public	Countywide Problem Identification Cyclical periods of drought place a strain on community culinary water resources.						
	ACTION Educate the public on the need to be water wise	MEDIUM	Ongoing	City funds	Countywide	Minimal	Water purveyor and newsletter editor	Use newsletter to educate the public
	OBJECTIVE: Conserve culinary water by codes or regulations							
	ACTION: Maintain and enforce rate policies that encourage water conservation	MEDIUM	Ongoing	County funds	Countywide	Minimal	Water purveyor and newsletter editor	County should evaluate a tiered water system

GRAND COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	OBJECTIVE: - Meet current and future water needs of community	Problem Identification Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	ACTION: Develop additional source and storage and implement conservation plans.	MEDIUM	Ongoing	City funds, State and Federal Government loans and/or grants	Countywide	To be determined	County Staff, Professional Services, and Contractors	To meet the needs of a community's residential and businesses water users, vigilance in locating new and additional sources as well as increasing storage capacity to meet current needs as well as future need is a must

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Wildfire	Objective: Reduce the risk of Wildland Fire throughout Iron County	Problem Identification: Iron County has a Moderate to Severe wildfire risk throughout the county. Areas of high concern are as follows: Brian Head Parowan Front Iron Town Comstock/Far West Cedar Highlands						
	Action: Create community fire safe councils and implement the “Community Fire Planning” process.	HIGH	On going	Obtain grant monies and alternative sources of funding through various grants and foundation.	Countywide	\$5,000.00 per plan	Unknown	The “Community Fire Planning” process was implemented through the Utah Division of Forestry, Fire, and State Lands in support of on-going efforts under the National Fire Plan to educate and empower landowners to take action to reduce the threat of wildfires within a community.
	Action: Implement fuel modification projects	HIGH	On going	Grants and private landowners	Countywide	Variable based on acreage and type of materials being removed.	State, County, Cities, Towns and residents	Through the creation of defensible space in and around communities, the threat of catastrophic wildfires will be greatly reduced.
	Action: To educate and inform the community of fire prevention	HIGH	Immediate and on going		Countywide	\$5,000.00 per year	County Planning and Zoning, Building Department, Fire Warden	Education is the key to informing homeowners about the risk of wildfires. Through a comprehensive education, program homeowners can take action independent to protect values at risk, and understand the effects of wildfires.
	Objective: Minimize the damage of a wildland fire and provide the appropriate emergency response.	Problem Identification: Brian Head Town is surrounded by federal and private lands that have suffered a severe beetle infestation. Fuel loading is 20 to 30 tons per acre and needs to be cleaned up to lessen the effects of a wildland fire on this community.						
	Action: Require all homeowners and businesses to provide a defense able space around there structures as provided in the international fire code.	HIGH	Continuing action. Twenty year plan	National Fire Plan and grants	Brian Head	\$5,000.00	Brian Head Public Safety	International Fire Code and Fire Wise publications

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Provide the necessary emergency services to properly respond to the effects of a wildland fire.	HIGH	In Place	Brian Head Town and Iron County	Brian Head	\$5,000.00	Brian Head Public Safety(police, fire, EMS) and other emergency services provided in Iron County	We feel that emergency services located in the Iron County region will be adequate to deal with the effects of a wildland fire in Brian Head Town.
	Objective: To clean brush from under trees and blade a fire zone protection around the town on county property.	Problem Identification: Kanarraville is surrounded by dry brush and juniper trees that have suffered 5 years of drought. The canyon winds from Kanarra Canyon increase the fire threat. The town is situated at the mouth of the canyon. The town has more than adequate water storage to fight fires. (350,000 + gal.)						
	Action: Work with landowners to clean a fire protection area around their properties.	HIGH	6 months to two years	From General Fund of the Town of Kanarraville, Inc./local property owners.	Kanarraville	\$3,000.00	Contracted workers, local landowners, Town maintenance crew.	Landowners are to be contacted and a request made that dry grass be mowed. Out lying landowners will be asked to clear a fire protection zone. All city property will be mowed and underbrush cleaned out. Iron County will be requested to help with clearing the canyon.
Landslide	Objective: Minimize the possibility to reinitiate mass movement in the Landslide areas that are shown on the Kaliser, January 1978 Report.	Problem Identification: In the “Ground Surface Subsidence in Cedar City report by Bruce N. Kaliser in January 1978 indicates two areas in sections 26, 27, 33, and 34 of Township 36 South, Range 11 West and Sections 19, 20, 29, and 30 of Township 35 South, Range 10 West that were massive landslide deposit areas. The report stated that Developments of this terrain might reinitiate mass movement.						
	Action: Inform property owners developing in the area of the possibilities for landslides.	MED	As development is proposed	None	Cedar City	Unknown	City Staff and Property Owner	Bruce N. Kaliser, January 1978 Report on Ground Surface subsidence in Cedar City.
	Action: Required Geological and Geotechnical reports for any proposed developments in the designated landslide areas with the possibility of independent reviews of the reports.	MED	With development engineering plans for the area	Developer	Cedar City		Licensed Geology and Geotechnical Firms	Required by Cedar City Subdivision Ordinance Chapter 32
	Action: Require developers to install developments according to recommends for the Geological and Geotechnical reports provided and approved.	MED	As landslide areas develop	Developer	Cedar City		Developer and Contractor	

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Flood	Objective: Reduce flood threat through Cedar City and Cedar Valley.	Problem Identification: Coal Creek at Cedar City is the outlet of a hydrologic basin of approximately 82 square miles. This basin ranges in elevation from 10,000+ to 5,000 ft. in the Cedar Valley. A 100 year storm would produce a flow of 5,000+ cfs through Cedar City and the unincorporated areas of Cedar Valley. The flow is highly variable. This flow is divided at the Woodbury split so about 1/3 goes west and 2/3 goes north.						
	Action: <u>WEST ROUTE:</u> Coal Creek Flooding in Cedar Valley With the project coming on Airport Road by Cedar City Corporation the small structure will be increased to the appropriate size, adequate to handle approximately 1,500 cfs, so this west route will go to Quichapa.	HIGH						The new structure on Hwy. 56 at the intersection with Lund Hwy. is being increased to handle approximately 1,500 cfs also. Iron County must presently realign and construct a new flood channel below this Hwy. 56 structure for approximately 1 mile. From there to Quichapa the existing channel must be widened in places and always maintained.
	Action: <u>NORTH ROUTE:</u> The north leg of this channel is in relatively good shape as far as structures are concerned until it reaches Midvalley Road. The structure there must be significantly enlarged. The channel on this leg must be improved thru the Flying “L” Ranch Subdivision; it must also be improved from the Brent Hunter Farm all the way past Regional Wastewater Treatment Plant and to Mud Springs.	HIGH	Within the next 3 years	County Public Works routine maintenance and Engineers budget.	Countywide		County Public Works	Flatten side slopes, construct new channel as necessary, clean willows, roses, Russian olive, and cottonwood trees, and debris that impedes flow. Rip rap may be advantageous in certain locations. Some rights-of-way must be obtained.
	Objective: Prevent these waters from doing damage to homes and/or farmlands.	Problem Identification: Floods from Fiddlers Canyon still have some potential of covering Cedar Valley lands.						
	Action: Prevent these waters from doing damage to homes and/or farmlands.	HIGH	Within the next 3 years	All possibilities are open			Public Works personnel	Construct a channel from the west side of the freeway to the north route of the Coal Creek flood channel.
	Objective: Keep these waters in the natural and historic flood channel.	Problem Identification: Excess spring runoff or thundershower waters from Summit Canyon cause flooding in Summit all too frequently. The main historic and natural flood channel is still discernible upon old aerial photos all the way from the northern town limits to the Little Salt Lake. Over the years the channel has become obstructed and is now functionally obsolete.						

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Keep these waters in the natural and historic flood channel.	HIGH	Within the next 10 years.	County Public Works and Engineers budget	Countywide		County Engineer and Public Works personnel	By survey, mark upon the ground the natural channel. Then construct and/or open it up so when necessary it will convey floodwaters thru the town and valley to the Little Salt Lake. Riprap may be necessary at some locations. Some easements may be necessary to obtain from the landowners.
	Objective: Keep these waters in the natural and historic flood channel.	Problem Identification: Excess spring runoff or thundershower waters from Parowan Canyon cause flooding in Parowan all too frequently. The main historic an natural flood channel is still discernible upon old aerial photos all the way from the western city limits to the Little Salt Lake. Over the years the channel has become obstructed and is now functionally obsolete.						
	Action: Keep these waters in the natural and historic flood channel.	HIGH	Within the next 3 years	County Public Works and Engineers budget	Countywide		County Engineer and Public Works personnel	By survey, mark upon the ground the natural channel. Then construct and/or open it up so when necessary it will convey floodwaters thru the Parowan Valley to the Little Salt Lake. Riprap may be necessary at some locations. Some easements may be necessary to obtain from the landowners.
	Objective: Prevent these flood waters from coming through residential areas. Iron County is responsible from the mouth of the canyon to the town boundary and again after it leaves the town boundary to west of I-15. Paragonah is responsible within the town boundary.	Problem Identification: Paragonah town has been flooded by waters from Red Creek much too often. It occurs mostly from July, August, and September thundershowers. Occasionally, excess spring runoff may pose significant threats.						

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Prevent these flood waters from going through residential areas.	HIGH	Within the next 2 years	Utah Army National Guard 115 th Engineer Battalion, 348 East Main Street, Lehi, Utah 84043, will contribute equipment and personnel, but no cash outlay. Iron County and Paragonah town will purchase what materials are necessary.	Paragonah		Utah Army National Guard, Iron County, and Paragonah town personnel	Construct and/or widen and deepen the existing flood way from the mouth of the canyon to west of I-15. UDOT will assist with crossing on Old Hwy. 91.
	Objective: Keep the frontage road from being covered by floodwaters.	Problem Identification: Occasionally, there are times when these waters may cover the frontage road on the east side of I-15.						
	Action: Keep the borrow ditches and culverts on the frontage road clean and functional.	MED	This is an on going maintenance item.	County Public Works	Countywide		County Public Works personnel	Keep the borrow ditches and culverts clean.
	Objective: Prevent these waters from getting to the Hwy. 18 right-of-way.	Problem Identification: When there is above normal winter snowfall, the spring runoff waters from Holt Canyon will make it all the way to Hwy. 18 in the Escalante Valley. These waters within the Hwy. Right-of-way presents a safety hazard.						
	Action: Prevent these waters from getting to the Hwy. 18 right-of-way.	MED	Within the next 3 years	a) Iron County Public Works b) UDOT c) Natural Resource Conservation Service d) Involved land owners			Personnel for the above listed entities	Construct a diversion structure in the Holt Canyon drainage to take part of this water east and spread it on various farms and in storage ponds. Construct 5 ponds on the Sherwood Bracken land to retain water so it will percolate into the underground water basin. Construct ditches so if the 5 th pond overflows then the water will be spread to various farmlands.
	Objective: To prevent these waters from reaching Beryl and causing problems	Problem Identification: If there is a heavy snow year and both the upper and lower Enterprise Reservoirs are relatively full, the spring runoff waters may reach almost to Beryl. This does not happen very often, but when it does it can be serious.						

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: To prevent these waters from reaching Beryl and causing problems	HIGH	This is an ever and on going issue.	Maintenance dollars and efforts.	Countywide		County Engineer and Public Works personnel	Prevent land use activities and growth from obstructing the natural drainage ways.
	Objective: Install flood control improvements along Coal Creek that would contain the design flood and protect the adjacent homes, businesses and City infrastructure.	Problem Identification: Coal Creek is the main drainage through Cedar City from Cedar Mountain. Flooding through the City along Coal Creek would damage homes, businesses and the City's infrastructure if the projected flows of 6,600 CFS were realized.						
	Action: Relocate the irrigation structure in Coal Creek that is currently located west of the SR-130 bridge structure.	HIGH	2004-2005	City and Federal Natural Resources Conservation Svc.	Cedar City		City Engineering Staff/NRCS Staff and Contractor	A Grant from the NRCS has been secured for this project.
	Action: Construct berms, levees, and other channel improvements that will contain the 100-year flood within the channel.	HIGH	2005-2006	City and Federal Natural Resources Conservation Svc.	Cedar City		City Engineering Staff/NRCS Staff and Contractor	A Grant from the NRCS has been secured for this project.
	Action: Obtain a Letter of Map revision from FEMA that will remove the flood zone designation from the property adjacent to Coal Creek.	HIGH	2006	City and Federal Natural Resources Conservation Svc.			City Engineering and Consultant	A Conditional Letter of map revision has been obtained from FEMA for the project. When the project is completed, the actual Letter of Map Revision can be obtained.
	Objective: Maintain the effectiveness of the flood control improvements in the Greens Lake Drainage to protect the affected development within the center of Cedar City.	Problem Identification: In 1962 Cedar City and the Soil Conservation Service constructed flood control facilities in the mouth of the Greens Lake drainage to protect the developments downstream from flooding from drainage above.						
	Action: Annually perform inspections of the Greens Lake flood control improvements to identify maintenance action items.	HIGH	February of Each Year	None	Cedar City		City Engineering Staff	Inspection and maintenance to be performed according to recommendations of the facility SOP and EAP.
	Action: Annually perform the maintenance identified from the inspection on the Greens Lake Flood Control Improvements.	HIGH	March thru April of each year	City Drainage Maintenance Budget			City Drainage Maintenance Crews	Inspection and maintenance to be performed according to recommendations of the facility SOP and EAP.

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Clean grates on the Greens Lake Flood Control Improvements to ensure unobstructed flow.	HIGH	Monthly during the months of April through October and during all storms.	City Drainage Maintenance Budget	Cedar City		City Drainage Maintenance Crews	
	Objective: Maintain the effectiveness of the flood control improvements in the Dry Canyon Drainage to protect the affected developments.	Problem Identification: In 2001 Cedar City constructed flood control facilities in the mouth of the Dry Canyon drainage to eliminate the FEMA flood zones and protect the developments in the area from 100 year flooding from drainage above.						
	Action: Annually perform inspections of the Dry Canyon flood control improvements to identify maintenance action items.	HIGH	February of each year	None	Cedar City		City Engineering Staff	Inspection and maintenance to be performed according to recommendations of the facility SOP and EAP.
	Action: Annually perform the maintenance identified from the inspection on the Dry Canyon Flood Control Improvements.	HIGH	March thru April of each year	City Drainage Maintenance Budget	Cedar City		City Drainage Maintenance Crews	Inspection and maintenance to be performed according to recommendations of the facility SOP and EAP.
	Action: Clean Grates on the Dry Canyon Flood Control Improvements to ensure unobstructed flow.	HIGH	Monthly during the months of April through October and during all storms.	City Drainage Maintenance Budget	Cedar City		City Drainage Maintenance Crews	
	Objective: To clean and refurbish existing dikes to the north and south and one dike in the central area of town.	Problem Identification: Kanarraville Town is in the foothills of Kanarra Mountain and at the mouth of the Kanarra Canyon and main drainage from the mountain. The slope of the terrain to the east of Kanarraville increases the probability of flooding.						
	Action: To maintain the existing dikes so they operate at peak performance.	HIGH	6 months to 1 year	Town resources and general maintenance expenses	Kanarraville	\$1,000 - \$2,000	Contracted equipment operators, citizens, town maintenance	Rebuild central dam that was destroyed with the new water tank. Clean out brush from the north dam. Rebuild the top of the south dam levee.
	Objective: Reduce flood threat from Parowan Canyon within Parowan City.	Problem Identification: Flooding within Parowan City limits, along the creek.						

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Maintain and improve flood channel.	HIGH	2004-2005	Parowan City	Parowan		Parowan City Public Works/Electrical Departments	To maintain these flood channels on an annual basis and during storms.
	Action: Maintenance of channels and bridge openings.	HIGH	Immediate	Parowan City (minimal)	Parowan		Parowan City Public Works Crew	Keep all bridge openings and upstream channels free of debris to prevent constriction during high flows.
	Objective: Identify areas susceptible to flooding	Problem Identification: Existing flood maps are outdated and inaccurate.						
	Action: Work with DES on flood plain mapping study to determine areas of potential flood threat.	HIGH	3 to 5 years	Unknown	Parowan	Unknown	State and contractor	Parts of Parowan City have been listed with FEMA as designated flood hazard areas.
Earthquake	Objective: Minimize the damage caused by an earthquake of the destructive magnitude and provides the appropriate emergency response.	Problem Identification: The U.S. Geological Survey, Geologic Map of Brian Head Town is Township 36-37 Range 09 W. These maps show that we have Geological Faults that transverse our area.						
	Action: Require construction of all structures requiring a building permit to be constructed according to the 2000 International Building Code structural design requirements.	HIGH	As building permits are approved	Town General Fund	Brian Head	Town Building Department Staff	2000 International Building Code and the U. S. Geological Survey, Geological Map of the Brian Head area.	

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Provide the necessary emergency services to properly respond to earthquake damage.	HIGH	In place	Brian Head and Iron County	Brian Head		Brian Head Public Safety(Police, fire, EMS), and the Iron County Sheriff's Office, Iron County Ambulance and the Iron County Fire Department.	We feel that emergency services will be adequate to respond to damages caused by the effects of an earthquake.
	Objective: Minimize the damage caused by an earthquake of the destructive magnitude and provides the appropriate emergency response.	Problem Identification: The U.S. Geological Survey, Geologic Map of the Cedar City Quadrangle, Iron County, Utah shows two Geologic Faults running through Cedar City. The Hurricane Fault runs along the toe of the mountain on the east side of the City, The North Hills Fault approximately parallels I-15. Both faults run in an approximate north/south direction. Ground Motion Figures from the International Building Code indicate that the Cedar City area is susceptible to earthquake activity.						
	Action: Require construction of all structures requiring a building permit to be constructed according to the 2000 International Building Code structural design requirements.	HIGH	As building permits are approved	City General Fund	Cedar City		City Building Department Staff	2000 International Building Code and the U. S. Geological Survey, Geologic Map of the Cedar City Quadrangle, Iron County, Utah
	Action: Provide the necessary emergency services to properly respond to earthquake damage.	HIGH	In Place	Cedar City and Iron County	Cedar City		Cedar City Fire Department and Police Department, Iron County Sheriffs Department and Ambulance Service	While the timing of extent of earthquake damages cannot be predicted, it is felt the current level of emergency services would be adequate to respond to damages caused by a moderately significant earthquake.

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Drought	Objective: It will take many years of above average precipitation to make up for the many years of drought we have experienced. Estimates of overall pasture and range conditions are about 60% of normal. Conditions are extremely variable depending on what area of the county you are looking at. Any precipitation received in September 2003 was very random in distribution and did not make much of an impact on the overall drought.	Problem Identification: Assessment of range and pasture conditions in Iron County for the 2002/2003 growing season, simply put they were the worst in recorded history. Data shows that we only received 20-30 percent of our normal precipitation; this is characterized as exceptional drought. Range and pasture have been impacted by lack of precipitation. Growing conditions have been so poor many ranges produced no useable forage. There has been mortality of sagebrush and juniper trees due to the drought with conditions so dry in the spring even the cheatgrass did not grow.						
	Action: Many studies have been done and we are involved in a drought cycle. We are supposedly in the downhill side of the cycle. Hopefully, things will start to get back to normal and improve the drought situation.	MED	On going	Unknown	Countywide	Could cost farmers/livestock many dollars. Some may even face bankruptcy.	Unknown	Studies done over the generations of time. History records show this to be the worst drought ever seen in Iron County. Need to keep an eye on underground water levels, seeps and springs to see if there will be enough for livestock and agricultural use in the future.
Insect Infestation	Objective: The best thing would be to totally get rid of the problem. However, that will never happen. Our objective is to learn to control the insects by trying different types of insecticides.	Problem Identification: Grasshoppers and Mormon Crickets are present every year in Iron County. Most years grasshoppers are an economic pest in the New Harmony Flats area and on Cedar Mountain. Mormon Crickets have been especially bad in 2003, they were reported in the Urie Creek area of Cedar Mountain. There was also a severe grasshopper infestation. 2002-2003 seems to have been especially bad for grasshoppers with reports of them eating landscaping, vinyl screens on windows and even eating the handle grips of bicycles laid down in the grass.						

IRON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Cut grasses short near homes	MED	Yearly, on going	U. S. Department of Agriculture, Iron County	Countywide	\$5,000.00	Landowners, farmers, County Agents	Something that has taken place in and around Southwestern Utah for decades. Our pioneer heritage even notes these infestations happening back then. Keeping grasses mowed short near homes would help keep some of the infestation away from subdivisions. Trying to control them has been difficult in the past due to problems with the endangered species act. There has been use of Dimilin in some of the harder hit areas of Iron County and it has proven to reduce the grasshopper populations in the areas that have been treated.
Radon Gas	Objective: Try to identify the areas that would be most susceptible to this problem and restricting building in these potential problem areas.	Problem Identification: The United States Geological Survey has evaluated the potential for radon gas within the boundaries of Iron County as low, less than 2 pCi/L to moderate, 2 to 4 pCi/L. The EPA recommends that all homes that measure 4 pCi/L and greater be mitigated. Radon Gas is a naturally occurring, chemically inert, radioactive gas that is not detectable by human senses. As a gas, it can move readily through particles of soil and rock, and can accumulate under the slabs and foundations of homes where it can easily enter into the living space through construction cracks and openings.						
	Action: Try to identify the areas in the county that would have this problem. Homes that are already built in problem areas could possibly be fixed so that radon gas is not a problem to the owners.	MED	Best done at time of construction. Possible to retrofit.	Property owner/homeowners expense	Countywide	\$400.00	County Building Department for advise.	Contact your local building department/contractor

JUAB COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Build dike structure up to divert flood.	Medium	Juab County EM, Levan Town	County, State, Federal	Levan Town and Juab County	\$5,000	Depends on Funding	Will prevent property damage and casualties due to flood.
Flood	Build debris basins on both Pigeon and Chicken Creeks. Protect the road and the culinary water line up Chicken Creek Canyon.	Medium	Juab County EM, Levan Town	County, State, Federal	Levan Town and Juab County	\$3,000,000	Depends on Funding	Will alleviate flood damage to roads and water mains.
Flood	Build levees along the eastside drainage and a dyke on the west side of town to prevent flooding from Currant Creek and Mona Reservoir.	Medium	Juab County EM, Mona Town	County, State, Federal	Mona Town and Juab County	\$400,000	Depends on Funding	Will help prevent property damage and casualties due to flood.
Flood	Install curb, gutter and storm drain system.	Medium	Juab County EM, Eureka City	City, County, State, Federal	Eureka City	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Multihazard	Public Education to mitigate casualties.	High	Schools, Emergency Mgmt. (EM) in Six County Region	Counties, State, Federal	Entire Six County Region	\$200,000/yr.	Ongoing	Increased ability to educate public of hazard risks and preparedness.
Multihazard	Educating Community Emergency Response Teams (CERTs).	High	EM in Six County Region, CERT Trainers	Counties, State, Federal	Entire Six County Region	\$18,000/yr.	Ongoing	Increased ability to educate first responders of hazard risks and preparedness.
Multihazard	Update Zoning Ordinances to prevent development in identifiable hazardous areas.	High	EM and County Planning Staff in Six County Region	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Prevents property damage and casualties due to hazards at moderate cost.
Multihazard	Join National Weather Service Strom Ready program.	Medium	EM in Six County Region	Counties NOAA	Entire Six County Region	Minimal	3 years	Participating jurisdictions will be ready for severe weather
Earthquake	Seismically retrofit culinary water pipeline to withstand earthquake.	Medium	Levan Water Company	Unknown	Levan Town and Juab County	Unknown	Depends on Funding	Levan will still have adequate water after earthquake strikes.
Earthquake	Identify and Retrofit high risk public buildings and churches to prevent earthquake damage.	Low	EM in Six County Region, Building Inspectors	Cities, Towns, Counties, State, Federal	Entire Six County Region	\$400,000,000	Depends on Funding	Will minimize property damage and casualties due to earthquake.

JUAB COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Adopt a No Special Flood Hazard Area (NSFHA) ordinance for certain municipalities outside of any floodplain.	Medium	Municipalities and Counties affected	Cities, Towns, Counties, State	Centerfield Town, Lynndyl Town	Unknown	Depends on Funding	Enables those municipalities at low risk to flood to concentrate on mitigating other hazards.
Flood	Evaluate and flood proof at risk buildings, particularly critical facilities.	Medium	Municipalities and Counties affected	City, Town, County, State, Federal	Fayette Town, Fountain Green City, Rocky Ridge Town, Wales Town	\$70,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Landslide	Monitor landslide zones for movement threatening subdivisions to better warn inhabitants of danger.	Medium	EM in Six County Region.	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Decreased risk of casualties due to landslides, enhanced warning for inhabitants.
Wildfire	Participate in the Utah Living with Fire Program. Particularly, at risk communities as identified in the National Fire Plan should be involved.	Medium	County Fire Wardens, FFSL, EM in Six County Region	Counties, State	Entire Six County Region	Minimal	2006	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Wildfire	County ordinances requiring defensible space, water source development, proper road width and escape routes in fire prone areas.	High	County Fire Wardens, LEPC, County Zoning Commissions	Counties, State	Hotspots throughout Six County Region	\$30,000	2005	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Wildfire	Establish defensible space around forest and city structures, water source development, escape routes, and controlled burns.	High	Forest Service (FS), BLM, County Fire Wardens, State Forestry, Fire and State Lands (FFSL), LEPC, Homeowners Associations	National Fire Plan (NFP), Healthy Forests Initiative (HFI)	Hotspots throughout Six County Region	\$45,000,000	Depends on Funding	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Dam Failure	Regularly monitor high hazard dams, strengthening them when necessary.	High	Local Water Companies, LEPC, Utah Department of Natural Resources (DNR)	Counties, Utah DNR, Federal	High Hazard Dams identified in each county annex.	Unknown	Depends on Funding	Increased ability to prevent dam failure and warn public of impending dam failure.
Drought	Develop additional water sources and storage as well as implement conservation plans.	High	Kanosh Band Water Company	State, Federal	Kanosh Band, Paiute Tribe of Utah	Unknown	Depends on Funding	Reduces risk of crop damage from drought.

JUAB COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Severe Weather	Plant trees west of towns at high risk of windstorms.	Medium	Towns, County EM	Towns, County, State, Federal	Hinckley, Lynndyl, and Oak City Towns in Millard County	Unknown	Depends on Funding	Reduces risk of damage and casualties due to windstorms.

KANE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
All Hazard	Objective: To increase the level of awareness for the residents of Kane County.	Problem Identification: The citizens of Kane County need to be made aware of the natural hazards that exist in their area. Through public awareness program earthquake safety, Africanized bee issues, and general individual preparedness programs will be presented.						
	Action: Conduct a Countywide community awareness campaign	MED	2 to 5 years	Public Funds	Countywide	\$10,000.00	Emergency Services Personnel.	Create a base of natural hazard identification, risk assessment, and planning. Incorporated planning objective Countywide.
	Objective: To increase the level of awareness for the residents of Big Water.	Problem Identification: The citizens of Big Water need to be made aware of the natural hazards that exist in their area. Through public awareness program earthquake safety, Africanized bee issues, and general individual preparedness programs will be presented.						
	Action: Conduct a Big Water community awareness campaign	MED	2 to 5 years	Public Funds	Big Water	\$5,000.00	Emergency Services Personnel.	The Town of Big Water is a somewhat isolated community. There is a greater need for a specific awareness program.
Wildfire	Objective: Protect residential areas from wildfire threat in the unincorporated areas of the county	Problem Identification: Specific areas of the county are susceptible to Wildland Fire threat. Specific areas of concern include: Glendale, Alton, Duck Creek, Strawberry Valley, Navajo Lake, and Meadow Spring.						
	Action: Identify, develop and support Firewise communities	HIGH	Ongoing	National Fire Plan Grant	Countywide	\$5,000.00 per plan	County, State Forestry Fire and State Lands, US Forest Service	Firewise program is a community based fire mitigation program.
	Action: Implement fuel break, lot clean up and other recommendations of completed community fire plans	HIGH	5 years	Firewise grant	Countywide	\$80,000.00 per year	Local, Private, County	Local support of Firewise communities is essential for a successful program.
	Objective: Minimize the effects of bark beetle infestation in order to reduce wild fire danger	Problem Identification: Beetle infestation is a concern in the areas of the County. Recent drought has weakened the trees allowing beetles to spread at an alarming rate. This is creating a fire hazard in the timber and in the pinion. This is also occurring in the subdivisions adjacent to areas of beetle kill.						
	Action: Identify those subdivisions that are impacted by beetle kill	HIGH	2 years	Unknown	Countywide	Unknown	Contractors, State and Federal Agricultural, USFS, State FFSL	Primary and secondary residential structures continue to encroach in areas of fire.
	Action: Implement fuel break, lot clean up and other recommendations of completed community fire plans	HIGH	5 years	Unknown, Firewise, other grants	Countywide	\$80,000.00 per year	Private, County	Bark beetle infestation has created a severe fire hazard in these areas

KANE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Improve Alton Town’s ability to protect it’s citizens and property from wildfire threat	Problem Identification: The current water system in Alton is constructed with 4” lines. The system is not adequate to protect the structures in town from a wildfire threat. Alton is listed as a community at risk from Wildfire.						
	Action: Upgrade the existing water distribution system to provide a capacity to fight Wildland Fires that threaten town	HIGH	As soon as possible, 1 – 2 years	Unknown, possible grants	Alton	Unknown	Private Contractor, Town	This is critical to the community’ ability to fight fires.
	Objective: Protect the community from a Wildfire threat	Problem Identification: Glendale is susceptible to wind driven Wildland Fire						
	Action: Complete a community fire plan	HIGH	2-3 years	National Fire Plan Grant	Glendale	\$5,000.00	County, State	Contact Keith Park to begin the planning process
	Objective: Protect area from wildland fire	Problem Identification: Weeds and trees in and along Kanab Creek from 500 North to Airport have created a fire hazards						
	Action: Evaluate the use of controlled burns in this area	HIGH	Winter Months	Unknown, possible County or State	Kanab	Dependent upon scope of project	Fire Department.	Every year or two a fire starts and is very hard to put out due to accessibility.
	Action: Build walking trails so fire department can us it to access area.	HIGH	When funds are available.	Grants	Kanab	\$ 1,500,000	County, volunteers	Access into area hinders firefighting efforts
Flood	Objective: Promote flood insurance throughout the County	Problem Identification: Flood occurs primarily from spring snow-melt in the higher elevations and summer flash flooding. Identifying and then controlling flooding will assist in responding to flood events. Protection of life and property before, during, and after a flooding event is essential.						
	Action: Create outreach document promoting flood insurance and include in local newspaper(s), libraries, and other public buildings.	HIGH	1 year	Minimal	Countywide	Unknown	County Engineer, State Floodplain Manager, DES	General public is usual not aware they can purchase flood insurance.
	Objective: Reduce threat of unstable canals throughout the County. Identify County-wide canal systems							

KANE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Map and assess for structural integrity canal systems in the County	HIGH	3-5 years	Federal grants	Countywide	Unknown	County Engineer, County Public Works, County Information and Technology, County Emergency Management	Private and Public canals are used for transportation and dispersion of water as well as flood control.
	Objective: Reduce flooding threat in Kanab, Orderville and Glendale							
	Action: Clear debris and other material from streams prior to spring snow melt.	HIGH	Ongoing	None	Countywide	Unknown	County Public Works	Most flooding is attributed to debris-laden streams.
	Objective: Ensure EOC(s) are equipped to respond to flooding.							
	Action: Obtain communication equipment that will allow for timely response to flooding.	HIGH	1 year	Federal Grants	Countywide	\$30,000	County Sheriff, County Emergency Management	An alternate EOC(s) also need dequate communication capabilities is essential between all response agencies within the County.
	Objective: Support updating of flood hazard data							
	Action: Support and encourage participation in the NFIP Flood Map Mod Program.	HIGH	Ongoing	Federal	Countywide	Unknown	County Engineer, State Floodplain Manager	Accurate flood maps assist the County in the administration of the NFIP and better reflects flood risk within the County.
	Objective: Evaluate current t flooding problems within Glendale Town	Problem Identification: There is a flood control problem on the east side of town.						
	Action: Contract with engineering firm to evaluate flood hazard	MED	5 years	Grants, federal	Glendale	\$3,000,000.00	Contract	More information is needed to assess the hazard and then develop a strategy and obtain funding

KANE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Reduce flood threat in Kanab.	Problem Identification: 100 North Street to Toms Canyon. At the present time, one of the areas of greatest concern near existing development is along 100 North Street to Toms Canyon. The estimated 100-year flow (most of which originates in undeveloped areas) is 1.588 cfs. The flow capacity of 200 North Street at one foot above the top of curb is approximately 800 cfs which leaves 788 cfs which should be carried in a storm drain to reduce the danger and risk of damage during periods of high runoff.						
	Action: Install adequate storm drain for excess flows.	HIGH	When funding is available.	Grants.	Kanab	\$1,018,500.	Contract	An 84-diameter storm drain approximately 4,850 feet in length is needed to carry the 788 cfs discussed.
	Objective: Reduce flood threat in Kanab below 300 S.	Problem Identification: Savage Point Drainage Basin. The Savage Point Drainage basin is comprised of 125 acres, the majority of which is steep, impervious areas.						
	Action: Increase storage capacity of drainage basin	HIGH	When funding is available.	Grants.	Kanab	\$150,000.00	Contract	This detention basin is not designed to eliminate flooding potential but would alleviate the problem.
	Objective: Stop erosion to Heaton property.	Problem Identification: The Heaton's have allowed the city to direct storm water onto their field so they can irrigate with it. When there is more water than can be absorbed we need a pipe to take the excess to the creek.						
	Action: Install pipe to divert excess storm water	LOW	In the next two years.	Grants or general funds.	Kanab	\$60,000.00	Contract	Make sure required permitting is in place prior to diverting storm water into the stream.
	Objective: Reduce flood threat to Highway 89 and land below.	Problem Identification: Pugh Canyon This area has a runoff of (1,670 cfs) and will need detention pond and storm drain facilities.						
	Action: Install detention pond and storm drains	HIGH	When funding is available.	Grants	Kanab	\$4,746,000	Contract	This will protect structures and infrastructure from flooding.
	Objective: Reduce flood threat in Kanab Creek Ranchos	Problem Identification: Kanab Creek Ranchos (Heaton Dr.) The run off from this area runs through most of the home and the City Park in the Ranchos.						
	Action: Develop adequate storm water system in area	HIGH	When funding is available.	Grants	Kanab	\$100,000.00 to \$160,000.00	Contract	Area is susceptible to storm water flooding following a severe thunderstorm
	Objective: Minimize the effects of storm runoff	Problem Identification: Runoff due to severe storms is a flooding problem, which occurs somewhat regularly throughout the town.						
	Action: Construct infrastructure improvements to contain storm runoff	MED	Unknown	Unknown	Orderville	\$3,000,000.00	Contractors, City and County	Construct curb & gutter, sidewalks with driveway access and line with concrete, and clean and maintain drainage washes, install debris grates on culverts

KANE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Severe Weather	Objective: Protect County from adverse affects of severe weather	Problem Identification: Winter storms, summer thunderstorms, hail, and high winds over southern Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists.						
	Action: County participation in the StormReady program.	HIGH	2 Year	State and Federal	Countywide	Unknown	City and County Emergency Management	Set up within the county emergency management and encourage all cities to participate, all requirements of the National Weather Service StormReady program.
	Action: Encourage avalanche preparedness for county backcountry users in the northeastern portion of the County	HIGH	1 Year	Minimal	Countywide	Minimal	County Emergency Management State Hazard Mitigation Team members, Utah Avalanche Forecast Center.	Avalanches and avalanche preparedness is not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry. While the avalanche terrain is mainly on US Forest Service land the search and rescue for the lost individual in more often than not coordinated by emergency managers with search parties comprised of county and city staff. Introductory avalanche awareness training could lessen the costs to Kane County and the cities within the county. Most avalanche victims die in avalanches started by themselves or someone in there party. Thus, education can limit the number of avalanche related searches each year.
	Action: Assess EOCs to ensure they are grounded lightning, to include buildings with towers, etc.	HIGH	2-3 years	Federal Grants	Countywide	Unknown	County Emergency Management	EOCs and alternate EOCs , Sheriff’s Dispatch, Command Vehicle(s)and associated equipment need to be protected from severe weather events including lightning.
Landslide	Objective: Reduce potential landslide risk on commercial and residential structures in areas of known landslide potential.	Problem Identification: There is a potential risk to structures located in areas identified by the FCAOG GIS as landslide risk areas.						

KANE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Assess the probability of landslides and identify specific structures at risk	HIGH	Undetermined	Property owner	Countywide	Unknown	Unknown	Soil surveys and other engineering surveys are needed.
	Objective: Remove risk to homes by removing rocks.	Problem Identification: Rockfall may impact structures within the County						
	Action: Remove large rocks overhanging existing developments.	MED	Undetermined	Not applicable	Countywide	Not applicable	City, County Planning	There are several areas in Kanab and Johnson Canyon where rocks overhang existing structures. Developments should include removal or remediation of large rock areas from being dislodged by earthquake or rains.
	Action: Remove potential rock hazards prior to building homes.	MED	5 year	None	Countywide	Unknown	Planning Departments	Prior to building, require builder/owner to secure or remove possible rock hazard.
Earthquake	Objective: Provide for emergency response and relief	Problem Identification: Transportation and utilities services could be severely impacted.						
	Action: Identify and maintain critical transportation and utility services	HIGH	Ongoing	Local governments and possible grants	Countywide	Unknown-Determined by the extent of damage anticipated.	County and City staff.	Critical transportation systems need to be maintained.
	Objective: Raise awareness of problems that could occur as a result of an earthquake.	Problem Identification: Many communities within the County are surrounded by rocky slopes. Kanab Creek and the East Fork of the Virgin River run through areas with structures. There is a high probability of rockfall caused by seismic events and possible liquefaction along the river areas.						
	Action: Maintain adherence to Land Use codes and restrictions to building in sensitive areas.	HIGH	Immediate and ongoing	Not applicable	Countywide	Not applicable	Town staff.	Some of the problems identified include falling rocks, diversion of the Kanab Creek and the Virgin River due to landslides.
	Objective: Reduce threat to public safety during an earthquake	Problem Identification: Damage to structures and utilities are likely during a seismic event.						

KANE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Retrofit inadequate construction.	HIGH	10 years+	Private	Countywide	Extreme	County Inspection Department, County Engineering Department, Private Engineers.	Old and inadequate construction, buildings with un-reinforced masonry to be mitigated.
	Objective: Educate community on earthquake damage prevention practices	Problem Identification: Lack of public awareness about earthquake damage prevention practices.						
	Action: Produce and/or distribute handouts and provide inspections to identify shortcomings in earthquake preparedness.	HIGH	1 year+	None identified	Countywide	\$50,000	Fire Department, Inspection Department	Having a community with residents educated on earthquake damage prevention practices will ensure greater safety of all residents of the County.
	Objective: Educate community on earthquake damage prevention practices							
	Action: Educate the public on damage prevention practices for earthquakes	HIGH	2 years	Grants from state and Federal governments	Countywide	\$50,000-\$75,000	Emergency Management and volunteers	Continue to establish a C.E.R.T. program in the County Earthquakes are taught as being the biggest hazard facing those in the area. Teaching the C.E.R.T. class should get the message out to residents.
Drought	Objective: Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on community culinary water resources.						
	Action: Educate the public on the need to be water wise	HIGH	Ongoing	City funds	Countywide	Minimal	Water purveyor and newsletter editor	Use a newsletter to educate the public
	Objective: Conserve culinary water by conservation							
	Action: Maintain and enforce rate policies that encourage water conservation		Ongoing	County funds	Countywide	Minimal	Water purveyor and newsletter editor	County should evaluate a tiered water system.

KANE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Meet current and future water needs of community	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	Action: Develop additional source and storage as well as implement conservation plans implemented.	HIGH	Ongoing	City funds, State and Federal Government loans and/or grants	Countywide	To be determined	County Staff, Professional Services, Contractors	To meet the needs of a community's residential and businesses water users, vigilance in locating new and additional sources as well as increasing storage capacity to meet current needs as well as future need is a must.
Insect Infestation	Objective: Reduce the impact and severity of insects	Problem Identification: Mormon crickets, cutworms and mosquito are a problem						
	Action: Spread insect bait and spray for mosquitoes	LOW	When required	City and County funds, Mosquito abatement funds come from property tax	Countywide	Approximately \$3.00 per property owner per month	Abatement District	Abatement Districts are critical in the controlling of insects
	Action: Conduct aerial spraying to reduce infestations	LOW	As infestations occur	By private individuals in most cases	Countywide	Varies, depending on acreage treated	Contractor	Agricultural fields are been subject to insect infestation especially during the recent years of drought.
	Objective: To increase the level of awareness for the residents of Kane County.	Problem Identification: Lack of public knowledge on insect infestation problems.						
	Action: Conduct a Countywide community awareness campaign	MED	2 to 5 years	Public Funds	Countywide	\$10,000.00	Emergency Services Personnel.	The citizens of Kane County need to be made aware of insect infestation issues that may affect their area. Through a public awareness program such as on Africanized bees, general individual preparedness will be improved.

MILLARD COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Chalk Creek flood control Project.	High	Fillmore City, Millard County EM	City, County, State, Federal	Fillmore City, Millard County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Minor Flood Channeling along county roads.	Medium	Millard County Road Dept.	County, State, Federal	Millard County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Clean Scipio Canal.	Medium	Scipio Town, Millard County EM	Town, County, State, Federal	Scipio Town, Millard County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Multihazard	Public Education to mitigate casualties.	High	Schools, Emergency Mgmt. (EM) in Six County Region	Counties, State, Federal	Entire Six County Region	\$200,000/yr.	Ongoing	Increased ability to educate public of hazard risks and preparedness.
Multihazard	Educating Community Emergency Response Teams (CERTs).	High	EM in Six County Region, CERT Trainers	Counties, State, Federal	Entire Six County Region	\$18,000/yr.	Ongoing	Increased ability to educate first responders of hazard risks and preparedness.
Multihazard	Update Zoning Ordinances to prevent development in identifiable hazardous areas.	High	EM and County Planning Staff in Six County Region	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Prevents property damage and casualties due to hazards at moderate cost.
Multihazard	Join National Weather Service Strom Ready program.	Medium	EM in Six County Region	Counties NOAA	Entire Six County Region	Minimal	3 years	Participating jurisdictions will be ready for severe weather
Earthquake	Seismically retrofit culinary water pipeline to withstand earthquake.	Medium	Levan Water Company	Unknown	Levan Town and Juab County	Unknown	Depends on Funding	Levan will still have adequate water after earthquake strikes.
Earthquake	Identify and Retrofit high risk public buildings and churches to prevent earthquake damage.	Low	EM in Six County Region, Building Inspectors	Cities, Towns, Counties, State, Federal	Entire Six County Region	\$400,000,000	Depends on Funding	Will minimize property damage and casualties due to earthquake.
Flood	Adopt a No Special Flood Hazard Area (NSFHA) ordinance for certain municipalities outside of any floodplain.	Medium	Municipalities and Counties affected	Cities, Towns, Counties, State	Centerfield Town, Lynndyl Town	Unknown	Depends on Funding	Enables those municipalities at low risk to flood to concentrate on mitigating other hazards.

MILLARD COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Evaluate and flood proof at risk buildings, particularly critical facilities.	Medium	Municipalities and Counties affected	City, Town, County, State, Federal	Fayette Town, Fountain Green City, Rocky Ridge Town, Wales Town	\$70,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Landslide	Monitor landslide zones for movement threatening subdivisions to better warn inhabitants of danger.	Medium	EM in Six County Region.	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Decreased risk of casualties due to landslides, enhanced warning for inhabitants.
Wildfire	Participate in the Utah Living with Fire Program. Particularly, at risk communities as identified in the National Fire Plan should be involved.	Medium	County Fire Wardens, FFSL, EM in Six County Region	Counties, State	Entire Six County Region	Minimal	2006	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Wildfire	County ordinances requiring defensible space, water source development, proper road width and escape routes in fire prone areas.	High	County Fire Wardens, LEPC, County Zoning Commissions	Counties, State	Hotspots throughout Six County Region	\$30,000	2005	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Wildfire	Establish defensible space around forest and city structures, water source development, escape routes, and controlled burns.	High	Forest Service (FS), BLM, County Fire Wardens, State Forestry, Fire and State Lands (FFSL), LEPC, Homeowners Associations	National Fire Plan (NFP), Healthy Forests Initiative (HFI)	Hotspots throughout Six County Region	\$45,000,000	Depends on Funding	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Dam Failure	Regularly monitor high hazard dams, strengthening them when necessary.	High	Local Water Companies, LEPC, Utah Department of Natural Resources (DNR)	Counties, Utah DNR, Federal	High Hazard Dams identified in each county annex.	Unknown	Depends on Funding	Increased ability to prevent dam failure and warn public of impending dam failure.
Drought	Develop additional water sources and storage as well as implement conservation plans.	High	Kanosh Band Water Company	State, Federal	Kanosh Band, Paiute Tribe of Utah	Unknown	Depends on Funding	Reduces risk of crop damage from drought.
Severe Weather	Plant trees west of towns at high risk of windstorms.	Medium	Towns, County EM	Towns, County, State, Federal	Hinckley, Lynndyl, and Oak City Towns in Millard County	Unknown	Depends on Funding	Reduces risk of damage and casualties due to windstorms.

MORGAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Flood	Objective: To Reduce Flood Threat To Morgan County	Problem Identification: Morgan County has two major rivers (East Canyon, Weber) that threaten communities during spring runoff.						
	Action: Maintenance of channels and bridge openings	HIGH	Immediate	Routine maintenance	Countywide	Minimal	County Road Dept.	Keep channels free of debris and clear out gravel bars, watch for constriction during high flow.
	Action: Work with Weber Basin to increase flood storage area	HIGH	Two-Three years	Undetermined/Potentially Grants	Countywide	Unknown	Emergency Management /Contract	Work with Weber Basin to increase the percentage of area that is allotted for flood storage.
	Action: Advise Residents and Develop Outreach Materials on the Availability of Flood Insurance	HIGH	Immediate	Unknown	Countywide	Minimal	Emergency Management, County and Morgan City Floodplain Administrator, State Floodplain Manager	Inform residents to the potential risk of flooding and advise them that flood insurance is available.
	Objective: Identify countywide canal systems							
	Action: Map and assess for structural integrity canal systems in the County	MED	3-5 years	Federal Grants	Countywide	Unknown	County and City Public Works, Canal Companies, County Engineering	Private and Public canals are used for transportation and dispersion of water as well as flood control. They also represent a hazard to structures and infrastructures.
Earthquake	Objective: Decrease the Negative Effect of Earthquakes Within the County	Problem Identification: Critical facilities (public safety, commercial buildings, schools) need to be made less vulnerable from the impact of earthquakes to allow a more timely response, and to decrease the impact to lives.						
	Action: Begin an Earthquake awareness campaign to include awareness of availability of earthquake insurance	HIGH	1-2 years	County	Countywide	Minimal	Emergency Management/ Contract	Work in conjunction with National Earthquake Awareness Week to put together a county awareness week.

MORGAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Facilitate a Pre-Earthquake damage assessment. To evaluate retro fix critical facilities	HIGH	1 year	City/County	Countywide	Moderate	County Engineer's/Contract	Inspect commercial buildings to see which ones are up to earthquake code.
	Action: Work with the county's businesses to ensure proper earthquake preparedness training	HIGH	1-5 years	County/grant	Countywide	Minimal	Emergency Management / Contract	Devise training schedule to ensure that all county businesses are properly trained.
Dam Failure	Objective: To Increase Community Awareness of the (Federal, State and Private) Dam's That Will Impact The County	Problem Identification: Federal, state, and private dams can impact Morgan County. Morgan County has poor community awareness and response systems.						
	Action: Educate community of evacuation routes	MED	1-2 years	County	Countywide	Minimal	Emergency Management	Work with public media to inform the community of proper evacuation routes.
	Action: Improve Emergency Notification Systems/Public Awareness Dam Information	MED	Over the next five years	Bureau of Reclamation	Countywide	High/ Extensive	Emergency Management/ Bureau of Reclamation	To work with the Bureau of Reclamation to install an early warning electronic notification system
	Action: Improve Inundation Maps	MED	Immediate	Bureau of Reclamation	Countywide	Moderate	Emergency Management/ Bureau of Reclamation	Improve current maps and have them digitally formatted
Drought	Objective: Develop and promote water conservation measures.	Problem Identification: The residents' of Morgan County are unaware of the water conservation options that are available to them.						
	Action: Promote water conservation utilizing Drought Contingency Plan	LOW	Immediate	County/grant	Countywide	Minimal	Emergency Management/ Contract/Soil Conservation/ Extension	Join with the State's "Slow – The – Flow" campaign
	Action: Promote the use of the secondary water system	LOW	Immediate	Secondary Water Board	Countywide	Minimal	Secondary Water Board / Emergency Management / City	Work with the Secondary Water board and the city to improve the use of the new secondary water system.
Severe Weather	Objective: Lessen The Impact of Severe Storms to Resident's and Businesses Within Morgan County	Problem Identification: Snowstorms, Hail, Thunderstorm/Lighting, Heavy Rain, Wind and Avalanche impact Morgan County. This is intensified by Morgan County's remote location.						

MORGAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Increase residents’ awareness of the need for food storage for use during severe storms.	MED	1-3 years	County/grants	Countywide	Minimal	Emergency Management / Extension	Use public media to increase the resident’s awareness of the effect of severe storms and road closures could have on them and their families.
	Action: Increase residents’ awareness of where emergency shelters are located	MED	1-3 years	County/grants	Countywide	Minimal	Emergency Management/ Contract	Use public media to increase awareness of locations of shelters that are available.
	Action: Have all cities in the county participate in the Storm Ready program	MED	1 year	County	Countywide	Minimal	County Emergency Management, NWS, and State DESHS	National Weather Service Storm Ready Program is a proven proactive severe weather mitigation activity.
	Action: Encourage avalanche preparedness for county backcountry users.	MED	1 year	County	Countywide	Minimal	County Emergency Manager, State Hazard Mitigation Team members, Utah Avalanche Forecast Center.	Avalanches and avalanche preparedness is not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry. While the avalanche terrain is mainly on US Forest Service land the search and rescue for the lost individual is more often than not coordinated by emergency managers with search parties comprised of county and city staff. Introductory avalanche awareness training could lessen the costs to Morgan County. Most avalanche victims die in avalanches started by themselves or someone in their party. Therefore, education can limit the number of avalanche related searches each year.
Wildfire	Objective: Increase compliance with existing building and fire codes.	Problem Identification: Continuing non-compliance with existing building codes and fire codes.						

MORGAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Develop and enforce current local, state and national codes.	HIGH	Ongoing	Local, state and federal grants	Countywide	Unknown	Local, state and federal agencies	Implement and enforce rules, regulations and codes
	Objective: Reduce overall risk from wild fire through education programs. Especially in the Mt. Green, Trappers Loop, area east of Porterville, and East Canyon.							
	Action: Public awareness through "Fire Wise" programs.	HIGH	2-3 years	Unknown	Countywide targeting URWIN areas	Minimal	Fire Departments, Utah Living With Fire, US Forest Service, and UFFSL	Wildfire education will be part of a holistic natural hazard education program pushed countywide. The program will include training on wildfires, earthquakes, flooding, landslides, and severe weather. Fire Wise training will include Utah specific wildfire safety material developed by the Utah Living With Fire Committee. Urban Wildland Interface areas will be identified and targeted. County fire department/district in the past have pushed wildland fire prevention and protection techniques with success. Other fire department/districts have used door hangers discussing defensible space.
	Action: Provide wildfire training to city and county planning and zoning officials and staff.	HIGH	Immediate	Unknown	Countywide	Minimal	UFFSL, DES, National Forest Service.	County Planners need to understand issues related to wildland fire fighting, such as water and access, in order of properly plan for development of lands in the urban/wildland interface.
Landslide	Objective: Educating planning commissions	Problem Identification: Morgan County has a significant threat of landslides. The community of Mt. Green and Trappers Loop Road (Highway 167) as well as critical pipeline routes can be impacted by landslides.						

MORGAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Provide City and County Planning Commissions with information concerning landslides.	LOW	1-2 years	Operating budgets	Countywide Mt. Green	Minimal	County Engineer/UGS	Decision-makers (Elected Officials) are critical in overall planning process and in the support of long-term natural hazard planning efforts.
	Objective: Monitor historical landslide areas.							
	Action: Evaluate current landslide maps to verify accuracy.	MED	Unknown	Grants/UGS	Countywide	Unknown	Emergency Services, County Engineer, UGS, and USGS	Currently available mapping on active landslides within Morgan County may not reflect accurately the risk on the ground.

PAIUTE INDIAN TRIBE OF UTAH NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Wildfire	Objective: Reduce the threat of Wildfire	Problem Identification: Man-made or lightening caused fires have occurred at times on the Hurricane Hills about 8 miles South of Cedar City on the East side of I-15						
	Action: Draft a Community Fire Plan	HIGH	Next fiscal year	Tribal and Federal funds	Cedar Band	Minimal	Regional Fire Planner	Contact Keith Parke
	Objective: Reduce the threat of Wildfire	Problem Identification: Man-made or lightening caused fires have occurred at times on the Hurricane Hills about 8 miles South of Cedar City on the East side of I-15						
	Action: Draft a Community Fire Plan	HIGH	Next fiscal year	Tribal and Federal funds	Indian Peaks Band	Minimal	Regional Fire Planner	Contact Keith Parke to draft the Plan, include firebreaks in Plan
	Objective: Reduce the negative impacts of wildfire on the residents of the Shivwits Band	Problem Identification: A wildfire threatened the residential area of the Shivwits Band during the summer of 2003 which included evacuation of the community						
	Action: Complete a Community Fire Plan of the Shivwits residential area	HIGH	6mo.-1 year		Shivwits Band	Minimal or no cost	BLM/State/Tribe	Contact Keith Parke to draft the Plan
Flood	Objective: Minimize flooding on the West side of the Hurricane Hills located on Tribal land	Problem Identification: The Cedar Band land including homes is located in a watershed area which floods regularly on normal years						
	Action: Create a diversion channel and retention basin along dry creek	HIGH	Next fiscal year	Tribal & federal	Cedar Band	Unknown	Tribal & county staff	Construct a diversion channel and retention basin
	Objective: Prevent future roadway erosion	Problem Identification: The roadway leading to the water tank washes out regularly						
	Action: Add culverts to keep water off of the road	HIGH	3 years	State & federal	Indian Peaks Band	Unknown	State & federal	Dig and add culverts to divert water, pave the road to the water tank
	Objective: minimize flooding	Problem Identification: Increase threat of flooding due to drought conditions						
	Action: Conduct a study to determine the location of flood water flows	MED	3 years	State & federal	Indian Peaks Band	Unknown	State & federal	Contact state and federal agencies, contract for the study
	Objective: Reduce the threat of flooding along Wildcat Wash	Problem Identification: Wildcat Wash has the potential to impact Shivwits residents with flood waters.						

PAIUTE INDIAN TRIBE OF UTAH NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: To store and carry flood waters safely through the residential area	HIGH	6 mo. To 3 years	UDOT, Washington County	Shivwits	Undetermined	Washington County/UDOT	Enlarge culverts carrying Wildcat Wash flows under Old Highway 91, repair and/or replace the detention basin on the Wash
	Objective: To reduce the threat of flood water inundation along Highway 91 at the Anasazi Valley turn off	Problem Identification: After a significant rainstorm the area near the turn off to Anasazi Valley along Highway 91 becomes inundated and blocks access to the Shivwits Band community						
	Action: Provide a way for flood waters to travel from one side of the highway to the other without threatening the roadway	MED	2-5 years	UDOT, Washington County	Shivwits	Undetermined	UDOT, Washington County	Install a culvert under the roadway
Earthquake	Objective: Reduce threat from earthquakes	Problem Identification: The Cedar band is located along the Hurricane Fault and is therefore subject to earthquake at any time						
	Action: Continue to follow building codes in construction techniques	HIGH	Ongoing	Tribal source	Cedar Band	Minimal	Tribal, counties, state	Continue to use Tribal Housing office to conduct building inspections
	Objective: Protect structures and utilities from earthquake damage	Problem Identification: The Hurricane fault branches off onto Reservation Land. The lower southeast corner of the Reservation, where homes are proposed, may be subject to liquefaction						
	Action: Have a study done to determine liquefaction danger and severity of the fault	HIGH	Undetermined	Federal grant	Indian Peaks Band	Unknown	Unknown	Contact FEMA to initiate a discussion about the study
Problem Soils	Objective: To reduce structural damage to residences	Problem Identification: Blue clay has been a problem in the residential area of the Shivwits Band						
	Action: Require or request basic soil suitability testing for any new development	HIGH	on-going	Tribe	Shivwits Band	Minimal	Tribe	Inform home-owner of the potential problem, suggest a contact with a soils engineer to perform testing
Radon Gas	Objective: Minimize radon gas levels in existing and future homes	Problem Identification: The Cedar Band is sitting on a moderate to low Radon area						
	Action: Conduct field test of radon levels in homes	HIGH	Next fiscal year	Tribal	Cedar Band	Minimal	Tribal	Obtain testing hardware to test each home on band land.
	Objective: Minimize radon gas levels in existing and future homes	Problem Identification: The Indian Peaks Band is sitting on a moderate to low Radon area						
	Action: Conduct field test of radon levels in homes	MED	Next fiscal year	Tribal	Indian Peaks Band	Minimal	Tribal	Obtain testing hardware to test each home on band land.

PIUTE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Build flood ponds for Marysvale Town.	Medium	Marysvale Town, Piute County EM	Town, County, State, Federal	Marysvale Town, Piute County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Construct flood control channel to divert flood from Revenue Gulch to Bullion Creek.	Medium	Marysvale Town, Piute County EM	Town, County, State, Federal	Marysvale Town, Piute County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Construct flood control dykes between Circleville Town and the Sevier River.	Medium	Circleville Town, Piute County EM	Town, County, State, Federal	Circleville Town, Piute County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Dredge Sevier River near Circleville Town.	Medium	Circleville Town, Piute County EM	Town, County, State, Federal	Circleville Town, Piute County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Construct flood control pond in Kingston Canyon	Medium	Kingston Town, Piute County EM	Town, County, State, Federal	Kingston Town, Piute County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Multihazard	Public Education to mitigate casualties.	High	Schools, Emergency Mgmt. (EM) in Six County Region	Counties, State, Federal	Entire Six County Region	\$200,000/yr.	Ongoing	Increased ability to educate public of hazard risks and preparedness.
Multihazard	Educating Community Emergency Response Teams (CERTs).	High	EM in Six County Region, CERT Trainers	Counties, State, Federal	Entire Six County Region	\$18,000/yr.	Ongoing	Increased ability to educate first responders of hazard risks and preparedness.
Multihazard	Update Zoning Ordinances to prevent development in identifiable hazardous areas.	High	EM and County Planning Staff in Six County Region	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Prevents property damage and casualties due to hazards at moderate cost.
Multihazard	Join National Weather Service Strom Ready program.	Medium	EM in Six County Region	Counties NOAA	Entire Six County Region	Minimal	3 years	Participating jurisdictions will be ready for severe weather
Earthquake	Seismically retrofit culinary water pipeline to withstand earthquake.	Medium	Levan Water Company	Unknown	Levan Town and Juab County	Unknown	Depends on Funding	Levan will still have adequate water after earthquake strikes.

PIUTE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Earthquake	Identify and Retrofit high risk public buildings and churches to prevent earthquake damage.	Low	EM in Six County Region, Building Inspectors	Cities, Towns, Counties, State, Federal	Entire Six County Region	\$400,000,000	Depends on Funding	Will minimize property damage and casualties due to earthquake.
Flood	Adopt a No Special Flood Hazard Area (NSFHA) ordinance for certain municipalities outside of any floodplain.	Medium	Municipalities and Counties affected	Cities, Towns, Counties, State	Centerfield Town, Lynndyl Town	Unknown	Depends on Funding	Enables those municipalities at low risk to flood to concentrate on mitigating other hazards.
Flood	Evaluate and flood proof at risk buildings, particularly critical facilities.	Medium	Municipalities and Counties affected	City, Town, County, State, Federal	Fayette Town, Fountain Green City, Rocky Ridge Town, Wales Town	\$70,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Landslide	Monitor landslide zones for movement threatening subdivisions to better warn inhabitants of danger.	Medium	EM in Six County Region.	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Decreased risk of casualties due to landslides, enhanced warning for inhabitants.
Wildfire	Participate in the Utah Living with Fire Program. Particularly, at risk communities as identified in the National Fire Plan should be involved.	Medium	County Fire Wardens, FFSL, EM in Six County Region	Counties, State	Entire Six County Region	Minimal	2006	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Wildfire	County ordinances requiring defensible space, water source development, proper road width and escape routes in fire prone areas.	High	County Fire Wardens, LEPC, County Zoning Commissions	Counties, State	Hotspots throughout Six County Region	\$30,000	2005	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Wildfire	Establish defensible space around forest and city structures, water source development, escape routes, and controlled burns.	High	Forest Service (FS), BLM, County Fire Wardens, State Forestry, Fire and State Lands (FFSL), LEPC, Homeowners Associations	National Fire Plan (NFP), Healthy Forests Initiative (HFI)	Hotspots throughout Six County Region	\$45,000,000	Depends on Funding	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Dam Failure	Regularly monitor high hazard dams, strengthening them when necessary.	High	Local Water Companies, LEPC, Utah Department of Natural Resources (DNR)	Counties, Utah DNR, Federal	High Hazard Dams identified in each county annex.	Unknown	Depends on Funding	Increased ability to prevent dam failure and warn public of impending dam failure.

PIUTE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Drought	Develop additional water sources and storage as well as implement conservation plans.	High	Kanosh Band Water Company	State, Federal	Kanosh Band, Paiute Tribe of Utah	Unknown	Depends on Funding	Reduces risk of crop damage from drought.
Severe Weather	Plant trees west of towns at high risk of windstorms.	Medium	Towns, County EM	Towns, County, State, Federal	Hinckley, Lynndyl, and Oak City Towns in Millard County	Unknown	Depends on Funding	Reduces risk of damage and casualties due to windstorms.

RICH COUNTY NATURAL HAZARD MITIGATION PROJECTS Bear River District Pre-Disaster Mitigation Plan 2004									
Hazard	Goal	Jurisdiction(s)	Objective	Project Description	Priority	Timeframe	Potential Funding	Estimated Cost	Resources
Multi-Hazard	Goal 2	All Jurisdiction	Prepare for Severe Weather Events	Become a National Weather Service “Storm Ready” Community (http://www.stormready.noaa.gov/)	Medium	2006		Minimal	NOAA
Flooding	Goal 1 & 2	Woodruff, Laketown	Mitigate impacts related to flooding.	Initiate participation in the National Flood Insurance Program (NFIP) to enable home owners to purchase flood insurance.	High	2005		Minimal	UDESHS, ACOE
Flooding	Goal 1 & 2	Jurisdictions with identified flood hazards	Make better informed decisions.	Develop a floodplain map for communities that do not have one. Refine, update and improve existing flood plain mapping.	Medium	2009	FEMA, UDESHS, Local	\$2,500 to \$65,000 each	Consultants, FEMA, UDESHS, Public Works
Wildfire	Goal 2	Garden City, Unincorporated Rich County	Become “Firewise” communities.	Enact ordinance and planning procedures to insure development in fire prone areas are done wisely. Provisions for multiple access routes, firebreaks, wide roads and adequate water sources should be included. Standards for homes should be enforced that require defensible space and fire wise building materials and designs (see www.firewise.org).	High	2007		Minimal	BRAG, Utah Division of State Lands, Fire and Forestry, Utah League of Cities and Towns.
Wildfire	Goal 2	Garden City, Unincorporated Rich County	Build citizen capacity	Educate and train property owners in Wildland/Urban interface areas on how to protect their property from wildfire.	High	2006	Local	Minimal	BRAG, Utah Division of State Lands, Fire and Forestry, Utah League of Cities and Towns.

SALT LAKE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Dam Failure	Objective: Review current State Dam Safety information on all identified high hazard dams in the County	Problem Identification: National statistics show that overtopping due to inadequate spillway design, debris blockage of spillways, or settlement of the dam crest account for 34% of all dam failures. Foundation defects, including settlement and slope instability, account for 30% of all failures. Piping and seepage cause 20% of national dam failures. This includes internal erosion caused by seepage, seepage and erosion along hydraulic structures, leakage through animal burrows, and cracks in the dam. The remaining 16% of failures are caused by other means.						Maps are not current and need to reflect impact on new residential and commercial properties. Utah Division of Water Rights Dam Safety Section in currently reviewing the maps as well as digitizing them. Digitized dam failure inundation maps will aid Salt Lake County in future emergency management planning.
	Action: Include dam inundation maps in current County and City EOPs.	MED	3-5 Years	Undetermined	County Wide	\$10,000.00	Emergency Services Bureau	
Drought	Objective: Limit unnecessary consumption of water throughout the County	Problem Identification: Salt Lake County is currently in the fifth year of drought conditions. Measures must be taken to conserve and address water shortages for both culinary and agricultural use.						County as well as the State are experiencing severe drought conditions. Increasing water demand will result in water shortages at some point in non-drought years.
	Action: Continue to encourage water conservation utilizing and promoting Jordan Valley Water Conservation outreach material with each City in the County.	HIGH	Ongoing	Undetermined	Countywide	Undetermined	Local Water Districts	
Drought	Objective: Address agricultural water shortages in the County							While agricultural areas are limited in County, there still remain concerns for economic hardship for livestock and crop farmers.
	Action: In areas of agricultural use livestock water rotation has been setup (Herriman, Riverton, Draper and South Jordan, West Valley City and other areas in the Unincorporated County).	MED	Ongoing	Undetermined	Herriman, Riverton, Draper, West Valley, and South Jordan	Undetermined	Emergency Services, USDA Farm Services Agency, And State Agriculture	
Drought	Objective: Encourage the development of secondary water systems							To reduce the demand on culinary systems it is proposed that more communities study the possibility of using secondary water for agricultural uses such as irrigation and lawn watering.
	Action: Coordinate with current water systems and develop and secondary waters systems plan for drought	MED	Immediate	Undetermined local sources	Countywide	Undetermined	Water Districts	

SALT LAKE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Drought/Wildfire	Objective: Study the areas and determine which fire resistant natural vegetation can be used in these areas of concern.	Problem Identification: Severe drought continues to maximize the potential for urban wildland interface fires in areas of the Cottonwood Canyons, Emigration Canyon, Rose Canyon, and Neff's Canyon (Unincorporated County) and Traverse/South Mountain and Bear Mountain (Draper City)						Residential property owners need to be educated on the most fire resistant forms of vegetation that can be placed around homes to reduce the threat from wildfire.
	Action: Develop outreach document specific to fire resistant natural vegetation.	HIGH	Ongoing		Targeting URWIN communities adjacent to Forest Service boundary.	\$5000.00	County, US Forest Service, Dept. of Agriculture, Utah Living With Fire Committee	
Earthquake	Objective: Provide redundancies in countywide communication systems.	Problem Identification: Numerous geologic hazards exist in the Salt Lake City metropolitan area, which can constrain land use. Active fault zones pose the threat of earthquakes, while steep mountains adjacent to the city create a potential for landslides, debris flows, rock falls, and snow avalanches. Streams and the fluctuating level of the Great Salt Lake create serious flood and ground-water problems. Considered as a whole, geologic hazards in the Salt Lake City metropolitan area confront planners with a variety of safety and economic issues that must be addressed before wise development can take place. Limited communication or lack of communication capabilities is always a shortfall during an emergency.						Current countywide communications systems need to be reevaluated.
	Action: Assess current countywide communications and interoperable emergency/warning systems	HIGH	1-2 years	Federal Grants	Countywide	\$ 3,000,000.00	Emergency Services	
Earthquake	Objective: Ensure adequate coordination of disaster response and recovery activities.							It is essential to have functional EOC to better coordinate disaster response and recovery activities
	Action: Assess EOC's (countywide)	HIGH	2-3 years	Federal Grants	Countywide	\$ 3,000,000.00	Emergency Services	
Earthquake	Objective: Provide information on earthquake potential effects to homeowners and developers.							Current earthquake data specific to the County needs to be centralized and easily accessible.
	Action: Update current earthquake maps (liquefaction and fault) and incorporated into the County GIS system.	MED	Ongoing	Unknown	Countywide	Undetermined	Emergency Services, County GIS, County Geologist, and UGS	
Earthquake	Objective: Improve public education regarding earthquake risks to improve quality of construction.							Knowledge of construction requirements in high hazard areas

SALT LAKE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Ensure current natural hazard ordinance(s) are online, linked to Emergency Services website, and easily accessible and can be download.	HIGH	Ongoing	Unknown	Countywide	Undetermined	Emergency Services, County Planning and Zoning, Permitting	prior to the permit process.
Flooding	Objective: Encourage 100% participation in the National Flood Insurance Program	Problem Identification: Although located in a semi-arid region, Salt Lake City is subject to cloudburst and snowmelt floods. The Jordan River’s three main northern tributaries are diverted into storm sewers beneath the city. During May and June 1983, a sudden warming trend rapidly melted a record mountain snow pack. The resulting runoff quickly exceeded the capacities of the storm sewers, and floodwaters were then diverted onto city streets. The flooding in 1983, and to a lesser extent in 1984, caused flood-control agencies to build sediment basins, install stream-bank protection, and dredge stream channels to reduce flood hazards. The Federal Emergency Management Agency (FEMA) has rated flood plains along the Jordan River and its tributaries for expected flood heights and areas susceptible to 100-year flood-frequency inundation have been delineated on County-wide FEMA Flood Insurance Rate Maps (FIRMs). These maps are updated as development occurs and channel obstructions, culvert modifications, and other changes alter potential flood heights and velocities. Salt lake County ordinances require the lowest flood grades (including basements) in new construction to be a minimum of 1 foot (0.3 m) above the appropriate FEMA flood elevation.						Flood insurance is not available in these communities limiting disaster assistance and participation in future mitigation grants.
	Action: Assist Holladay City and the Town of Alta to apply for participation in NFIP (National Flood Insurance Program).	MED	1 Year	None required	Alta and Holladay City	None		
Flooding	Objective: Provide current FIRMs for emergency planners.							Countywide digitized flood maps need to updated in a timely and efficient manner and local emergency planners made aware of how to access and interpret the data.
	Action: Update & digitize floodplain maps	MED	2-3 years	County Public Works/Flood Control, State Floodplain Office, and FEMA	Countywide	Unknown	County Flood Control, County GIS, and FEMA	
Flooding	Objective: Identify countywide canal systems							Private and Public canals as well as the Salt Lake Aqueduct are used for transportation and dispersion of water as well as flood control.
	Action: Map and assess for structural integrity canal systems in the County	MED	3-5 years	Federal grants	Countywide	Unknown	Public Works Engineering	
Flooding	Objective: Identify dry dams/reservoirs that may have the potential for failure.							A dry dam is used for flood control or temporary irrigation storage
	Action: Map and assess all dry dams/reservoirs in the county	LOW	3-5 years	Federal Grants	Countywide	Unknown	Works Engineering, Utah Dam Safety Section.	

SALT LAKE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Landslide	Objective: Reduce the threat of landslides/debris flow following wild fires.	Problem Identification: Slope instability has not been a major problem in the Salt Lake area, but as development moves higher into the foothills and nearby canyons slope stability is becoming a major issue affecting future development. Types of slope instability in the Salt Lake area include rock fall, debris flow and debris flood, rotational and transitional slumps, and earth flows. During unusually wet springs in 1983 and 1984 numerous slope failures in the Wasatch Range resulted in debris flows and floods that caused extensive damage to urban areas north of Salt Lake City (Anderson and others, 1984). Similar failures occurred in canyons adjacent to Salt Lake City, but none reached developed areas. In Salt Lake County, 56 percent of all slope failures have occurred on hillsides where slopes range between 31 and 60 percent. That statistic prompted Salt Lake County in 1986 to lower the maximum allowable build able slope from 40 percent to 30 percent. Even so, 23 percent of observed slope failures have occurred on slopes of 30 percent or less.						Post fire debris flows have caused significant damage to communities impacted by wild fire.
	Action: Develop protocol for working with State and Federal agencies in developing impact of post fire debris flow hazard.	MED	Unknown	Federal Grants	Countywide	Unknown	Emergency Services, National Weather Service, NRCS, USFS, and UGS	
Landslide	Objective: Monitor historical landslide areas.							Currently available mapping on active landslides within Salt Lake County may not reflect accurately the risk on the ground.
	Action: Evaluate current landslide maps to verify accuracy.	MED	Unknown	Federal Grants	Salt Lake City Draper City	Unknown	Emergency Services, County Geologist, UGS, and USGS	
Landslide	Objective: Improve public awareness regarding high-risk landslide areas.							Allows communities, residents, developers, planners and emergency managers access to information
	Action: Have landslide maps readily available on line through County EM website	MED	Unknown	Federal Grants	High risk communities	Unknown	Emergency Services/Coun ty Geologist, UGS, and USGS	
Severe Weather	Objective: Become NWS Storm Ready Community	Problem Identification: Snowstorms over northern Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists. The region is characterized by intense vertical relief with the Great Salt Lake and surrounding lowlands located near 4300 ft MSL while the adjoining Wasatch Mountains to the east reach as high as 11,000 ft MSL. This relief has major impact on winter storms and results in large contrasts in average annual snowfall. For example, Salt Lake City International Airport (4280 ft MSL) receives an average annual snowfall of 65" while Alta ski area (8750 ft MSL) observes 520". Populated terrain benches surrounding the Salt Lake, which are located 150-200 m higher than the airport, have annual accumulations near 100".						Becoming a Storm Ready Community is a positive public outreach and preparedness effort that involves the entire County.

SALT LAKE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Contact NWS/SLC Office and begin process of becoming a Storm Ready Community.	LOW	Unknown	None	Countywide	Unknown	Emergency Services/National Weather Service	
Severe Weather	Objective: Improve response times to severe weather alerts.							
	Action: Incorporate NWS on light boards on freeway system.	LOW	Unknown	Federal Grants	Countywide	Unknown	Emergency Services/National Weather Service/UDOT	
Severe Weather	Objective: Address Countywide needs of special populations that may be impacted by severe weather conditions.							Secondary events due to severe weather such as power outages and the shoveling of snow can have a great impact on the elderly population.
	Action: Create outreach materials (what to do when severe weather strikes) specific to this group and insert the information into Countywide phone books, and phone books specific to 55+ age group developed in County Aging services.	LOW	Unknown	Federal Grants	Countywide	Unknown	Emergency Services/National Weather Service	

SALT LAKE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Encourage avalanche preparedness for county backcountry users.	LOW	1 year	Minimal	Countywide	Minimal	City and county Emergency Managers, State Hazard Mitigation Team members, Utah Avalanche Forecast Center.	Avalanches and avalanche preparedness is not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry. While the avalanche terrain is mainly on US Forest Service land the search and rescue for the lost individual is more often than not coordinated by emergency managers with search parties comprised of county and city staff. Introductory avalanche awareness training could lessen the costs to Salt Lake County and the cities within the county. Most avalanche victims die in avalanches started by themselves or someone in their party. Thus, education can limit the number of avalanche related searches each year.
Severe Weather	Objective: Prevent damage to critical facilities							
	Action: Assess EOCs to ensure they are grounded lightning, to include buildings with towers, etc.	MED	2-3 years	Federal Grants	Countywide	Unknown	Emergency Services/County Facilities	
Wildfire	Objective: Reduce overall risk from wild fire through education programs.	Problem Identification: Utah’s typical fire season is the dry period from May through October. Lightning causes the largest numbers of wildfires. The recent wildfires in the western States, the 1994 Tyee fire in Washington, the 1993 Southern California fire siege, and the 1991 Oakland Hills fires are examples of the growing fire threat which results from the Wildland/Urban Interface. The Wildland/Urban interface is defined as the area where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Since 1985, approximately 9,000 homes have been lost to urban/wildland interface fires across the United States. In 1990 Salt Lake County created a wildland program shortly after a wildland fire threatened Emigration Canyon, a major urban interface area at the county’s eastern boundaries. The fire began in a day use picnic area known as Afleck Park, possibly the result of an unattended campfire. The fire quickly spread to the west and up the side of the mountain, with only one ridge between it and Emigration Canyon. The incident lasted for five days, in which time 5500 acres were burned, but fortunately, no one was injured and no structures were lost.						Wildfire education will be part of a holistic natural hazard education program pushed countywide. The program will include training on wildfires, earthquakes, flooding, landslides, and severe weather. Fire Wise training will include Utah

SALT LAKE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Public awareness through "Fire Wise" programs.	HIGH	2-3 years	Unknown	Countywide	Unknown	Fire Departments, Utah Living With Fire, US Forest Service, and UFFSL	specific wildfire safety material developed by the Utah Living With Fire Committee. Urban Wildland Interface areas will be identified and targeted. County and City fire departments in the past have pushed wildland fire prevention and protection techniques with success. Fire departments have used door hangers discussing defensible space, participated in Emigration Canyon public wildfire awareness exercises, and offered free home fire proofing evaluations.
Wildfire	Objective: Educate homeowners on the need to create open space free of burnable fuels near structures in urban wild land areas.							Defensible space is the process of preparing ones home to be easily defended by the fire department in the event a wildfire occurs.
	Action: Defensible space	HIGH	Ongoing	Local	Identified URWIN communities	\$ 5000.00	Emergency Services, County and City Fire Departments.	

SAN JUAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
WILDFIRE	OBJECTIVE Provide fire breaks around residences and commercial business that may be at risk of wildfire by blading and other methods	Countywide Problem Identification Provide fire breaks around residences and commercial business that may be of threat from a wildfire. Most of the area does not have a high impact potential from wildfire						
	ACTION: Blade firebreaks as needed	MEDIUM	Ongoing	Local, Chapter, Tribal, and Federal Funds	Countywide	\$5,000 annually	Local, Chapter, Tribal and Federal Agencies	Work with Chapter officials to determine areas for firebreaks
	OBJECTIVE: Reduce the wildfire threat in Navajo Mountain and Aneth/Red Mesa areas	Countywide Problem Identification: Specific areas of the Utah strip are susceptible to wildland fire danger.						
	ACTION: Thin Tamarisk/undergrowth along river bottom.	MEDIUM	1 year	Federal Grant	Countywide	Unknown	Bluff Fire Dept.	ACTION: Thin Tamarisk/undergrowth along river bottom.
	ACTION: Map areas on the Utah Strip of the Navajo Nation that may have wildland fire threat	LOW	Next fiscal year	Local, Tribal and Federal	Countywide	Minimal	Local, Chapter, Tribal and Federal Agencies	Review fire reports from previous years to determine threat areas
LANDSLIDE	OBJECTIVE: Map areas on the Utah portion of the Navajo Nation that have had historical incidents of landslides	Countywide Problem Identification: Potential landslides on the Utah portion of the Navajo Nation, particularly those areas that have had prior threats or incidents						
	ACTION: Review historical information and reports, interviews with citizens.	MEDIUM	FY 2005	Local, Tribal and Federal funding	Countywide	\$1,000	Local, Chapter, Tribal and Federal Agencies	Historical information and interviews.

SAN JUAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	OBJECTIVE: Reduce potential of landslides on county and state highways.	Countywide Problem Identification: Potential risk of structures in mountainous areas to be damaged by landslides.						
	ACTION Remove material, enlarge culverts, re-route existing highways.	MEDIUM	Undetermined	Local, State, Chapter, Tribla and Federal	Countywide	Unknown	Local, Chapter, Tribal and Federal Agencies	Soil surveys and other engineering surveys, historical
EARTHQUAKE	OBJECTIVE: Increase public awareness	Countywide Problem Identification Unknown number of seismically unsafe structures around the Utah portion of the Navajo Nation. The risk based on historical incidents has not been high.						
	ACTION: Conduct pubic awareness campaign	LOW	Ongoing	Federal and State grants, local sources	Countywide	Unknown	Agency personnel and volunteers	Contact DESHS Earthquake Program Specialist. Enhance earthquake instructions in schools
	OBJECTIVE: Organize Community Emergency Response Teams (CERT).							
	ACTION: Assist with the organization of Community Emergency Response Teams among the Navajo Nation, if it is determined to be a local priority	LOW	Ongoing	Federal, Tribal, and State Grants	Countywide	Unknown	Tribal, State and local government	Navajo Nation Department of Emergency Management, Utah Chapters, and Utah
FLOOD	OBJECTIVE: Identify flood prone areas on the Utah portion of the Navajo Nation.	Countywide Problem Identification: Identify and map areas that are prone to flood based on historical reports and incidents and encourage flood loss reduction measures						
	ACTION: Mapping of potential flood areas.	HIGH	FY 2005	Unknown	Countywide	\$5,000	Local, Chapter, Tribal and State	Contact DESHS Flood Mapping Specialists

SAN JUAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	OBJECTIVE: Reduce or eliminate flooding impacts on State and County highways based on historical incidents	Countywide Problem Identification Reduce impact on State and County Highways from Flooding						
	ACTION: Identify areas at risk from flooding	HIGH	Ongoing	State, Local, Federal	Countywide	Unknown	County and State	County Road and UDOT, NNDOT and Engineers
	OBJECTIVE: Repair numerous reservoirs throughout the Utah portion of the Navajo Nation	Countywide Problem Identification Many reservoirs have been filled in and/or broken through out the years and have not been repaired.						
	ACTION: Repair and or clean out reservoirs throughout the Utah portion of the Navajo Nation	MEDIUM	Ongoing	State, Federal, Tribal	Countywide	Unknown	Federal, Chapter, Tribal	Chapter and Farm Service Agency Personnel
	OBJECTIVE: Promote flood insurance throughout the County	Problem Identification: Reduce economic loss due to flooding.						
	ACTION: Create outreach document promoting flood insurance and include in local newspaper(s), libraries, and other public buildings	HIGH	1 year	State, Federal, County	Countywide	Minimal	County and City (non in AOG area) State Floodplain Manager	General public is usually not aware they can purchase flood insurance.
DROUGHT	OBJECTIVE: Develop more water storage tanks and systems for culinary and agriculture use on the Utah portion of the Navajo Nation	Countywide Problem Identification Water Storage.						
	ACTION Conduct feasibility study	HIGH	Unknown	Unknown	Countywide	Unknown	County, Chapter, Tribal, Federal, HIS	Chapter, Tribal and Farm Service Agency personnel
	OBJECTIVE: Develop more reservoirs on Utah portion of Navajo Nation	Countywide Problem Identification Water storage for animals						

SAN JUAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Develop new reservoir	MEDIUM	Ongoing	State and Federal Grants	Countywide	Unknown	NRCS, UACD, USU Extension, Tribal	NRCS, Chapter, USU Extension, Tribal
	OBJECTIVE: Increase drought awareness education	Countywide Problem Identification Lack of public awareness of efficient water usage						
	ACTION: Use several ways to educate the public on efficient water usage	HIGH	Ongoing	State, Federal grants, Federal programs, NTUA	Countywide	Unknown	NRCS, UACD, USU Extension, HIS, NTUA	Research problem areas, Create programs to make the public aware, Use newsletters and newspapers. Hold field trips.
INFESTATION	OBJECTIVE: Have government agencies develop better insect control methods on federal grounds	Countywide Problem Identification Infestations of Army Cut-Worms and other insects on the Utah portion of the Navajo Nation.						
	ACTION: Improve insect control methods on reservation lands	MEDIUM	5 years	Federal	Countywide	Unknown	APHIS, Tribal, other Federal and State agencies	Educate landowners to control methods and more into their lifecycles.
SEVERE WEATHER	OBJECTIVE: Reduce power outages	Countywide Problem Identification: Wind damage to property and resulting loss of power to areas on the Utah portion of the Navajo Nation, prepare residents to have 72 hours kits and provide for residents and animals in the event of severe weather, such as high winds, winter storms, mud from rains and snow storms, etc.						
	ACTION: Improve power infrastructures to minimize power outages	MEDIUM	Ongoing	Multiple groups	Countywide	Unknown	Private, local utilities, UPL and NTUA	Contact utilities on current situation. Gather data on power outage, and frequency of outages.
	OBJECTIVE: Provide education to residents of the Utah portion of the Navajo Nation	Countywide Problem Identification: Education for residents.						

SAN JUAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Provide education to residents including 72-hour kits, etc	HIGH	Ongoing	County, State, Tribal, Federal	Countywide	\$5,000	Chapters, County, Tribal, Federal, and USU Extension	CERT Teams, Health Officials, and Newsletters
	OBJECTIVE: Protect County from adverse effects of severe weather	Countywide Problem Identification: Snowstorms, summer thunderstorms, hail, and high winds over southeastern Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists.						
	ACTION: Participate in the Storm Ready program at the county level	HIGH	2 years	State and Federal	Countywide	Unknown	City and County Emergency Management	Set up within the county emergency management and encourage all cities to participate, all requirements of the National Weather Service Storm Ready program.
PROBLEM SOILS	OBJECTIVE: Reduce damage to crops, grazing lands, etc. from wind erosion.	Countywide Problem Identification: Wind Erosion						
	ACTION: Improve conditions to reduce soil erosion	MEDIUM	Ongoing	USDA, government programs	Countywide	Unknown	NRCS, UACD, USU Extension	
ROCK SLIDES	OBJECTIVE: Minimize safety risk and property damage to Bluff Town due to Rockslide .	Countywide Problem Identification: Rock slides are a safety risk in Bluff						
	ACTION Develop an Emergency rockslide reaction plan	MEDIUM	1 year	Federal Grant	Bluff and Countywide	Unknown	Bluff Fire Dept.	With help with coordinating an emergency response
HAZ MAT SPILL	OBJECTIVE: Protect lives and property from haz mat spills on US 191 in Bluff near Bluff Elementary School	Countywide Problem Identification: A vehicle transporting hazardous material may easily flip over on US 191 in Bluff near the sharp corner by Bluff Elementary School, forcing an evacuation of the school and several residences in town and re-route traffic through town. Protect lives and property from haz mat spills						
	ACTION: Post better signage	MEDIUM	1 year	Federal Grant	Countywide	Unknown	Bluff Fire Dept.	

SAN JUAN COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Erect cement protective railing around corner	MEDIUM	1 year	Federal Grant	Countywide	Unknown	Bluff Fire Dept.	
	ACTION: Develop an Emergency HAZMAT Team	MEDIUM	1 year	Federal Grant	Countywide	Unknown	Bluff Fire Dept.	
	ACTION: Coordinate with UDOT, County HAZMAT Team	MEDIUM	1 year	Federal Grant	Countywide	Unknown	Bluff Fire Dept.	
	OBJECTIVE: Prevent White Mesa Uranium Mill contaminates from entering the town's sole source of drinking water							
	ACTION: Garner continuing support of community to prevent additional radioactive waste from being stored at White Mesa Mill	LOW	Ongoing	Unknown	Countywide	Unknown	Bluff Service Areas	

SANPETE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Construct flood control levees along Uinta/Gammett and Fountain Green Creeks.	Medium	Fountain Green City, Sanpete County EM	City, County, State, Federal	Fountain Green City, Sanpete County	\$1,000,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Extend existing levee at mouth of Wales Canyon south.	Medium	Wales Town, Sanpete County EM, FS	City, County, State, Federal	Wales Town, Sanpete County	\$150,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Install SNOTEL site in the watershed of Canal Creek at 7,500' elevation.	Medium	State Division of Emergency Services (DES), Natural Resource Conservation Service (NRCS), Sanpete County	Cities, County, State, Federal	Ephraim, Mt. Pleasant, and Spring Cities, Sanpete County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Place a Stream Gauge on Canal Creek at the upper diversion.	Medium	State Division of Emergency Services (DES), Natural Resource Conservation Service (NRCS), Sanpete County	Cities, County, State, Federal	Ephraim, Mt. Pleasant, and Spring Cities, Sanpete County	Unknown	Depends on Funding	Increased ability to warn inhabitants in these cities; Decreased risk of property damage and casualties due to flooding.
Flood	Perform watershed calibration study and a FLO 2D study of Canal Creek.	Medium	State Division of Emergency Services (DES), Natural Resource Conservation Service (NRCS), Sanpete County	Cities, County, State, Federal	Ephraim, Mt. Pleasant, and Spring Cities, Sanpete County	Unknown	Depends on Funding	Increased ability to determine proper mitigation of flood risk; Decreased risk of property damage and casualties due to flooding.
Flood	Storm Water Management Plan/Infrastructures	Medium	Ephraim City, Sanpete County EM	City, County, State, Federal	Ephraim City, Sanpete County	\$35,000	Depends on Funding	Increased ability to determine proper mitigation of flood risk; Decreased risk of property damage and casualties due to flooding.
Flood	Construct flood channels in Ephraim City.	Medium	Ephraim City, Sanpete County EM	City, County, State, Federal	Ephraim City, Sanpete County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.

SANPETE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Construct channels for flood mitigation in Fairview City.	Medium	Fairview City, Sanpete County EM	City, County, State, Federal	Fairview City, Sanpete County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Purchase generator for 2 nd water pump	Medium	Fairview City, Sanpete County EM	City, County, State, Federal	Fairview City, Sanpete County	\$10,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Dig flood control ditch east of Fayette Town.	Medium	Fayette Town, Sanpete County EM	Town, County, State, Federal	Fayette Town, Sanpete County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Increase size of culvert pipe at Fayette Town.	Medium	Fayette Town, Sanpete County EM	Town, County, State, Federal	Fayette Town, Sanpete County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Level out creek bed to mitigate flooding in Gunnison.	Medium	Gunnison City, Sanpete County EM	City, County, State, Federal	Gunnison City, Sanpete County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Construct flood diversion canal at mouth of Manti Creek Canyon.	Medium	Manti City, Sanpete County EM	City, County, State, Federal	Manti City, Sanpete County	Unknown	Depends on Funding	Decreased risk of casualties and property damage to hydroelectric power plant and 50 homes (\$5,250,000) due to flooding;
Flood	Dig flood control channels near Mt. Pleasant City.	Medium	Mt. Pleasant City, Sanpete County EM	City, County, State, Federal	Mt. Pleasant City, Sanpete County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Multihazard	Public Education to mitigate casualties.	High	Schools, Emergency Mgmt. (EM) in Six County Region	Counties, State, Federal	Entire Six County Region	\$200,000/yr.	Ongoing	Increased ability to educate public of hazard risks and preparedness.
Multihazard	Educating Community Emergency Response Teams (CERTs).	High	EM in Six County Region, CERT Trainers	Counties, State, Federal	Entire Six County Region	\$18,000/yr.	Ongoing	Increased ability to educate first responders of hazard risks and preparedness.

SANPETE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Multihazard	Update Zoning Ordinances to prevent development in identifiable hazardous areas.	High	EM and County Planning Staff in Six County Region	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Prevents property damage and casualties due to hazards at moderate cost.
Multihazard	Join National Weather Service Strom Ready program.	Medium	EM in Six County Region	Counties NOAA	Entire Six County Region	Minimal	3 years	Participating jurisdictions will be ready for severe weather
Earthquake	Seismically retrofit culinary water pipeline to withstand earthquake.	Medium	Levan Water Company	Unknown	Levan Town and Juab County	Unknown	Depends on Funding	Levan will still have adequate water after earthquake strikes.
Earthquake	Identify and Retrofit high risk public buildings and churches to prevent earthquake damage.	Low	EM in Six County Region, Building Inspectors	Cities, Towns, Counties, State, Federal	Entire Six County Region	\$400,000,000	Depends on Funding	Will minimize property damage and casualties due to earthquake.
Flood	Adopt a No Special Flood Hazard Area (NSFHA) ordinance for certain municipalities outside of any floodplain.	Medium	Municipalities and Counties affected	Cities, Towns, Counties, State	Centerfield Town, Lynndyl Town	Unknown	Depends on Funding	Enables those municipalities at low risk to flood to concentrate on mitigating other hazards.
Flood	Evaluate and flood proof at risk buildings, particularly critical facilities.	Medium	Municipalities and Counties affected	City, Town, County, State, Federal	Fayette Town, Fountain Green City, Rocky Ridge Town, Wales Town	\$70,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Landslide	Monitor landslide zones for movement threatening subdivisions to better warn inhabitants of danger.	Medium	EM in Six County Region.	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Decreased risk of casualties due to landslides, enhanced warning for inhabitants.
Wildfire	Participate in the Utah Living with Fire Program. Particularly, at risk communities as identified in the National Fire Plan should be involved.	Medium	County Fire Wardens, FFSL, EM in Six County Region	Counties, State	Entire Six County Region	Minimal	2006	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Wildfire	County ordinances requiring defensible space, water source development, proper road width and escape routes in fire prone areas.	High	County Fire Wardens, LEPC, County Zoning Commissions	Counties, State	Hotspots throughout Six County Region	\$30,000	2005	Decreased risk of property damage and casualties due to uncontrolled wildfires.

SANPETE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Wildfire	Establish defensible space around forest and city structures, water source development, escape routes, and controlled burns.	High	Forest Service (FS), BLM, County Fire Wardens, State Forestry, Fire and State Lands (FFSL), LEPC, Homeowners Associations	National Fire Plan (NFP), Healthy Forests Initiative (HFI)	Hotspots throughout Six County Region	\$45,000,000	Depends on Funding	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Dam Failure	Regularly monitor high hazard dams, strengthening them when necessary.	High	Local Water Companies, LEPC, Utah Department of Natural Resources (DNR)	Counties, Utah DNR, Federal	High Hazard Dams identified in each county annex.	Unknown	Depends on Funding	Increased ability to prevent dam failure and warn public of impending dam failure.
Drought	Develop additional water sources and storage as well as implement conservation plans.	High	Kanosh Band Water Company	State, Federal	Kanosh Band, Paiute Tribe of Utah	Unknown	Depends on Funding	Reduces risk of crop damage from drought.
Severe Weather	Plant trees west of towns at high risk of windstorms.	Medium	Towns, County EM	Towns, County, State, Federal	Hinckley, Lynndyl, and Oak City Towns in Millard County	Unknown	Depends on Funding	Reduces risk of damage and casualties due to windstorms.

SEVIER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Strengthen canal outside Aurora City.	Medium	Aurora City, Sevier County EM	City, County, State, Federal	Aurora City, Sevier County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Build Utah Department of Transportation (UDOT) bridge above state canal north of Aurora City.	Medium	Aurora City, Sevier County EM, UDOT	City, County, State, Federal	Aurora City, Sevier County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Rebuild flood retention ponds in Glenwood Town.	Medium	Glenwood Town, Sevier County EM	Town, County, State, Federal	Glenwood Town, Sevier County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Update flood map for Glenwood Town	Medium	Glenwood Town, Sevier County EM, FEMA	Town, County, State, Federal	Glenwood Town, Sevier County	Unknown	Depends on Funding	Increased ability to determine proper mitigation of flood risk; Decreased risk of property damage and casualties due to flooding.
Flood	Perform a flood engineering study for Koosharem Town.	Medium	Koosharem Town, Sevier County EM	Town, County, State, Federal	Koosharem Town, Sevier County	Unknown	Depends on Funding	Increased ability to determine proper mitigation of flood risk; Decreased risk of property damage and casualties due to flooding.
Flood	Construct concrete barriers and built up beams in Joseph Town.	Medium	Joseph Town, Sevier County EM	Town, County, State, Federal	Joseph Town, Sevier County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Upgrade existing culverts to mitigate flood in Salina City.	Medium	Salina City, Sevier County EM	City, County, State, Federal	Salina City, Sevier County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Install storm drain system in Redmond Town.	Medium	Redmond Town, Sevier County EM	Town, County, State, Federal	Redmond Town, Sevier County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.

SEVIER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Maintain flood retention walls for Richfield City.	Medium	Richfield City, Sevier County EM	City, County, State, Federal	Richfield City, Sevier County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Upgrade storm drain system in Richfield City.	Medium	Richfield City, Sevier County EM	City, County, State, Federal	Richfield City, Sevier County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Construct small debris basin in Bertelson Canyon to mitigate flooding in Monroe City.	Medium	Monroe City, Sevier County EM	City, County, State, Federal	Monroe City, Sevier County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Multihazard	Public Education to mitigate casualties.	High	Schools, Emergency Mgmt. (EM) in Six County Region	Counties, State, Federal	Entire Six County Region	\$200,000/yr.	Ongoing	Increased ability to educate public of hazard risks and preparedness.
Multihazard	Educating Community Emergency Response Teams (CERTs).	High	EM in Six County Region, CERT Trainers	Counties, State, Federal	Entire Six County Region	\$18,000/yr.	Ongoing	Increased ability to educate first responders of hazard risks and preparedness.
Multihazard	Update Zoning Ordinances to prevent development in identifiable hazardous areas.	High	EM and County Planning Staff in Six County Region	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Prevents property damage and casualties due to hazards at moderate cost.
Multihazard	Join National Weather Service Storm Ready program.	Medium	EM in Six County Region	Counties NOAA	Entire Six County Region	Minimal	3 years	Participating jurisdictions will be ready for severe weather
Earthquake	Seismically retrofit culinary water pipeline to withstand earthquake.	Medium	Levan Water Company	Unknown	Levan Town and Juab County	Unknown	Depends on Funding	Levan will still have adequate water after earthquake strikes.
Earthquake	Identify and Retrofit high risk public buildings and churches to prevent earthquake damage.	Low	EM in Six County Region, Building Inspectors	Cities, Towns, Counties, State, Federal	Entire Six County Region	\$400,000,000	Depends on Funding	Will minimize property damage and casualties due to earthquake.
Flood	Adopt a No Special Flood Hazard Area (NSFHA) ordinance for certain municipalities outside of any floodplain.	Medium	Municipalities and Counties affected	Cities, Towns, Counties, State	Centerfield Town, Lynndyl Town	Unknown	Depends on Funding	Enables those municipalities at low risk to flood to concentrate on mitigating other hazards.

SEVIER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Evaluate and flood proof at risk buildings, particularly critical facilities.	Medium	Municipalities and Counties affected	City, Town, County, State, Federal	Fayette Town, Fountain Green City, Rocky Ridge Town, Wales Town	\$70,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Landslide	Monitor landslide zones for movement threatening subdivisions to better warn inhabitants of danger.	Medium	EM in Six County Region.	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Decreased risk of casualties due to landslides, enhanced warning for inhabitants.
Wildfire	Participate in the Utah Living with Fire Program. Particularly, at risk communities as identified in the National Fire Plan should be involved.	Medium	County Fire Wardens, FFSL, EM in Six County Region	Counties, State	Entire Six County Region	Minimal	2006	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Wildfire	County ordinances requiring defensible space, water source development, proper road width and escape routes in fire prone areas.	High	County Fire Wardens, LEPC, County Zoning Commissions	Counties, State	Hotspots throughout Six County Region	\$30,000	2005	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Wildfire	Establish defensible space around forest and city structures, water source development, escape routes, and controlled burns.	High	Forest Service (FS), BLM, County Fire Wardens, State Forestry, Fire and State Lands (FFSL), LEPC, Homeowners Associations	National Fire Plan (NFP), Healthy Forests Initiative (HFI)	Hotspots throughout Six County Region	\$45,000,000	Depends on Funding	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Dam Failure	Regularly monitor high hazard dams, strengthening them when necessary.	High	Local Water Companies, LEPC, Utah Department of Natural Resources (DNR)	Counties, Utah DNR, Federal	High Hazard Dams identified in each county annex.	Unknown	Depends on Funding	Increased ability to prevent dam failure and warn public of impending dam failure.
Drought	Develop additional water sources and storage as well as implement conservation plans.	High	Kanosh Band Water Company	State, Federal	Kanosh Band, Paiute Tribe of Utah	Unknown	Depends on Funding	Reduces risk of crop damage from drought.
Severe Weather	Plant trees west of towns at high risk of windstorms.	Medium	Towns, County EM	Towns, County, State, Federal	Hinckley, Lynndyl, and Oak City Towns in Millard County	Unknown	Depends on Funding	Reduces risk of damage and casualties due to windstorms.

SUMMIT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Flood	Objective: Encourage 100% participation in the National Flood Insurance Program (NFIP).	Problem Identification: Flood occurs primarily from spring snow-melt and occasionally from localized summer thunderstorms. Identifying and then controlling flooding will assist in responding to flood events. Protection of life and property before, during, and after a flooding event is essential.						
	Action: Assist Town of Francis in joining NFIP	HIGH	1-year	None required	Francis	None	County Emergency Management, County Engineer, State Floodplain Manager	FEMA has yet to map the Town of Francis with Special Flood Hazards (SFHA). The community does not participate in the NFIP therefore flood insurance is not available.
	Objective: Promote flood insurance throughout the County							
	Action: Create outreach document promoting flood insurance and include in local newspaper(s), libraries, and other public buildings.	HIGH	1-year	Unknown	Countywide	Minimal	County Engineer, State Floodplain Manager, DES	General public is usual not aware they can purchase flood insurance.
	Objective: Reduce threat of unstable canals throughout the County. Identify County-wide canal systems							
	Action: Map and assess for structural integrity canal systems in the County	HIGH	3-5 years	Federal grants	Countywide	Unknown	County Engineer, County Public Works, County Information and Technology, County Emergency Management	Private and Public canals are used for transportation and dispersion of water as well as flood control.
	Objective: Reduce flooding threat in Oakley, Woodland, Wanship, Hoytsville, Coalville, Peo, Francis and Henefer.							

SUMMIT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Clear debris and other material from streams prior to spring snow melt.	HIGH	Ongoing	Unknown	Oakley, Woodland, Wanship, Hoytsville, Coalville, Peo, Francis, and Henefer	Unknown	County Public Works	Most flooding is attributed to debris-laden streams.
	Objective: Ensure EOC(s) are equipped to respond to flooding.							
	Action: Obtain communication equipment that will allow for timely response to flooding.	HIGH	1 year	Federal Grants	Countywide	\$30,000	County Sheriff, County Emergency Management	An alternate EOC is being considered in Kamas. Adequate communication capabilities are essential between all response agencies within the County.
	Action: Support and encourage participation in the NFIP Flood Map Mod Program.	HIGH	Ongoing	Federal	Countywide	Unknown	County Engineer, State Floodplain Manager	Accurate flood maps assist the County in the administration of the NFIP and better reflects flood risk within the County.
Wildfire	Objective: Increase compliance with existing building and fire codes.	Problem Identification: Continuing non-compliance with Fire-wise development “Best Practices”.						
	Action: Develop and enforce current local, state and national codes	HIGH	Ongoing	Local, state and federal grants	Countywide	Unknown	Local, state and federal agencies	Implement and enforce rules, regulations and codes
	Objective: Educate homeowners on how to reduce risk of wildfire damage	Problem Identification: Building continues to be of concern in Urban Wildfire Interface Areas (URWIN). Especially in the following areas: Pine Mountain – Oakley, Samak – Kamas, Sage Mountain – Echo, Mountainland and developed areas near Bear River Service on Mirror Lake Highway.						
	Action: Conduct an education program (Firewise) on reducing wildfire risks	HIGH	Ongoing	County	Countywide	Minimal	Fire District(s), County Emergency Management, State FFSL	Educate homeowners using newsletters and personal contacts of the importance of clearing combustibles from perimeters of their homes

SUMMIT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Develop a firebreak road in Pine Mountain Subdivision in Oakley	HIGH	3-years	County, State and Federal	Oakley	Unknown	Private land owners, County Public Works, County Emergency Management, Fire District, State Forestry Fire and State Lands, US Forest Service	Wildfires have the potential to threaten this area. This will assist in protecting the community by providing a firebreak
	Action: Continue to work with current Firewise communities (Pinebrook, The Colony’s, Summit Park) on their wildfire risks	HIGH	Ongoing	County, State and Federal Grants	Pinebrook, The Colony’s, and Summit Park	Minimal	County Emergency Management, State FFSL, US Forest Service	It is essential we continue to promote wildfire mitigation actions and educate homeowners on wildfire risks.
Landslide	Objective: Reduce potential landslide risk on commercial, residential structures, and infrastructure (pipelines and utilities) in areas of known landslide potential.	Problem Identification: There is a potential risk to structures located in areas identified by the MAG GIS as landslide risk areas.						
	Action: Assess the probability of landslides and identify specific structures and infrastructure at risk	MED	Undetermined	County Engineer, County Emergency Management, County Public Works, Utilities, Developers and Property Owners	Countywide	Unknown	Unknown	Soil surveys and other engineering surveys are needed.
	Action: Include landslide data in County Information and Technology GIS system and include on County website.	MED	Undetermined	County, possible grants	Countywide	To be determined	County GIS Staff, UGS	General public and developers will have access to landslide data.
Earthquake	Objective: Provide for emergency response and relief	Problem Identification: Summit County will be impacted indirectly from an earthquake on the Wasatch Front. Transportation and utilities services to and from the County could be severely impacted.						

SUMMIT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Identify and maintain critical transportation and utility services	LOW	Ongoing	Grants	Countywide	Unknown-Determined by the extent of damage anticipated.	County staff	Critical transportation systems need to be maintained.
	Objective: Through the CERT Program, educate community on earthquake damage prevention practices	Problem Identification: Lack of public awareness about earthquake damage prevention practices.						
	Action: Educate the public on damage prevention practices for earthquakes	MED	2-years	State and Federal Grants from state and Federal governments	Countywide	\$50,000-\$75,000	County Emergency Management and volunteers	Continue to support C.E.R.T. program in the County. Earthquakes preparedness techniques and guidelines can be utilized in an all-hazard approach to personal and individual preparedness.
Drought	Objective: Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on community culinary water resources.						
	Action 1: Educate the public on the need to be water wise	LOW	Ongoing	State and Federal	Countywide	Minimal	Water Districts	Use a newsletter to educate the public
	Action: Coordinate with current water systems and develop a secondary water systems plan for drought	LOW	Immediate	Undetermined local sources	Countywide	Minimal	Water Districts	To reduce the demand on culinary systems it is proposed that more communities study the possibility of using secondary water for agricultural uses such as irrigation and lawn watering.
Severe Weather	Objective: Protect County from adverse affects of severe weather	Problem: Snowstorms, summer thunderstorms, hail, and high winds over northern Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists.						
	Action 1: County participation in the StormReady program.	HIGH	2-years	State and Federal	Countywide	Unknown	City and County Emergency Management	Set up within the county emergency management and encourage all cities to participate, all requirements of the National Weather Service StormReady program.

SUMMIT COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Encourage avalanche preparedness for county backcountry users.	HIGH	Ongoing	State and Federal	Countywide	Minimal	County Emergency Management State Hazard Mitigation Team members, Utah Avalanche Forecast Center.	Avalanches and avalanche preparedness is not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry. While the avalanche terrain is mainly on US Forest Service land the search and rescue for the lost individual is more often than not coordinated by emergency managers with search parties comprised of county and city staff. Introductory avalanche awareness training could lessen the costs to Summit County and the cities within the county. Most avalanche victims die in avalanches started by themselves or someone in their party. Thus, education can limit the number of avalanche related searches each year.
	Action: Assess EOCs to ensure they are grounded lightning, to include buildings with towers, etc.	HIGH	2-3 years	Federal Grants	Countywide	Unknown	County Emergency Management	Proposed alternate EOC (Kamas), Sheriff’s Dispatch, Command Vehicle(s) and associated equipment need to be protected from severe weather events including lightning.

TOOELE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Drought	Objective 1: Take actions to maintain adequate culinary water supplies	Problem Identification: Large areas that lack sufficient precipitation to maintain ground water levels within the County, affecting culinary, agricultural and commercial/industrial uses.						
	Action: Develop a public awareness campaign to encourage water conservation.	HIGH	Ongoing	Apply for available local, state, and federal grants	Countywide	TBD	County USU Extension, Health Department, Emergency Management and auxiliary personnel.	Multi-agency coordination effort
	Action: Establish economic incentives for water conservation.	HIGH	Ongoing	Grants available through state government	Countywide	TBD	City Officials, Local water systems	Awareness to city and local officials
	Objective 2: Protect water aquifers							
	Action: Create and enforce zoning (land use) to protect primary recharge areas.	MED	Ongoing enactment of ordinances	Local government funding	Countywide	TBD	Existing planners, planning commissions, engineers, and public officials	Educate planners and formal adoption of ordinances
	Action: Watch countywide inventory data from public, private, and monitoring wells.	MED	Ongoing	Local funds supplemented by grants made available	Countywide	TBD	Health Department, USGS, and Emergency Management personnel coordinated effort	Data has been available, but intra-agency coordination needs to be improved
Wildland Fire	Objective 1: Take actions to enforce the codes that are currently in place.	Problem Identification: Lack of code enforcement within and awareness of the Wildland Urban Interface.						

TOOELE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Find personnel qualified to inspect property with regard to Wildfire Protection Standards	HIGH	6 months	N/A	Countywide	Minimal	City and county fire departments, Emergency Management and Engineering	Regular Fire Warden duties stand in the way of inspection.
	Objective: Educate persons living or working in these areas about the hazard.							
	Action: Present Fire Wise workshops for residents of high-risk areas.	MED	Ongoing	N/A (Fire Wise materials are provided free of charge)	At risk communities	Minimal	Fire Warden, fire personnel and county planners	People are not being informed of potential hazards.
	Action: Inform people seeking building permits and realtors showing homes in these areas of the risk.	MED	Ongoing	Local government funding	At risk communities within Tooele County	TBD	Fire Warden, fire personnel and county planners	Potential homebuilders and buyers are not aware of the risk or the building codes to help mitigate the risk.
	Action: Determine the specific areas where the Wildfire Protection Standards are in effect and make it available to the public in a graphic form.	MED	6-12 months	Unknown	Countywide	TBD	County GIS Dept. and Emergency Management Staff	Knowledge of these areas is vague and only passed on verbally.
Severe Weather	Objective: Educate more citizens about recognizing and knowing the dangers of severe weather hazards.	Problem Identification: Severe weather related incidents result in a large number of disaster declarations and emergency response needs.						
	Action: Increase Weather Spotter training	MED	Ongoing	Unknown	Countywide	Minimal	Emergency Management Staff and National Weather Service Staff	Weather Spotters add increased forewarning of severe weather.

TOOELE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Increase Amateur Radio Operator Involvement in weather observations.	MED	Ongoing	Unknown	Countywide	Minimal	HAM Radio Club, Emergency Management Staff	HAM operators typically discuss weather in all communications. Note: Tooele County is a NWS Storm Ready county and therefore we have done just about everything possible to mitigate severe weather incidents. This objective is just one more step beyond what we have already accomplished.
Infestation	Objective: Establish continuous funding sources for countywide insect control	Problem Identification: Negative economic impacts from grasshopper, Mormon Cricket, and other types of insects.						
	Action: Provide historical data and other information to raise awareness levels of elected and appointed officials regarding infestation impacts and ripple effects.	MED	Ongoing	Local Funds	Countywide targeting agricultural	Minimal	USDA APHIS, UDAF, USU Extension and local governments	Insect infestations are cyclic while insect control funding is not.
	Objective 2: Utilize historical data to forecast infestation cycles and monitor pest populations to implement early prevention strategies.							
	Action: Review research data and develop additional insect monitoring sites	MED	Ongoing	USDA APHIS, UDAF, and USU Extension	Countywide	Minimal	USDA APHIS, UDAF, and USU Extension	Understanding insect infestation cycles and early detection through monitoring can greatly reduce insect damage.
Earthquake	Objective: Reduce the threat to life and property within anticipated fault zones.	Problem Identification: Development on identified fault traces increase the risk to life and property following an earthquake.						
	Action: Develop and implement land use ordinances.	HIGH	Ongoing	Local governmental funding	Countywide	Minimal	Existing planners, planning commissions, engineers, and public officials.	Existing faults have already been identified and are monitored.

TOOELE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective 2: Take advantage of continuing education opportunities for planners and policy officials							
	Action: Attend ACT-21 classes	HIGH	Ongoing	Local government funding	Countywide	Minimal	Existing planners, planning commissions, engineers, and public officials	ATC-21 Training is a pre-earthquake assessment of buildings course helpful in determining the potential danger of a building.
	Action: Collect building data for input into computer earthquake models.	HIGH	6-12 Months	Unknown	Countywide	Minimal	Emergency Management Staff, Planners, and Inspectors	No current data on building inventory for use in damage and cost loss models in the event of an earthquake.

UINTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Dam Failure	Objective: Use technology to aid in prevention of flood loss due to dam failure	Problem Identification: Reduce down stream loss in Uintah County due to dam failure.						
	Action: Digitize high hazard dam failure inundation maps	HIGH	Ongoing	State government	Countywide	500 dollars per dam	Dam Safety Section, and AGRC	Numerous technological advancements have been made which will help reduce the likely hood of dam failure and reduce the risk to down stream populations should a dam fail. These techniques will only reduce the risk if they are properly understood and implemented. The above mitigation recommendations when implemented will represent a first step into this new technology for Duchesne County. The county understands there are additional technologic steps that can be taken such as increase number of telemeter snow and stream gauges. Look for these advances in future revisions to the mitigation plan.
	Action: Update Emergency Operations Plan to include GIS dam failure estimates	HIGH	Next EOP update	County	Countywide	Undetermined	County GIS and Emergency Manager	
	Action: Educate the local elected officials, developers, and citizens.	HIGH	Within the next two years	County	Countywide	Minimal	County employees	
	Action: Updated Emergency Action Plans (EAP) and integration with GIS Systems.	HIGH	Ongoing	FEMA, State and Local	Countywide	Unknown	State and Local	
	Action: Implementation of more debris dams would assist in controlling floods, reducing the amount of debris and mud that come through. Maintenance of flood control pools in existing dams would also be very beneficial.	HIGH	Ongoing	Town and County funds	Countywide	Minimal	Water surveyor and newsletter editor	
Drought	Objective: Conserve culinary water by educating the public	Problem Identification: Current, past and future drought issues within Uintah County.						
	Action: Educate the public on the need to be water wise	HIGH	Ongoing	County funding	Countywide	Minimal	Water surveyor and newsletter editor	Use a newsletter to educate the public
	Objective: Develop more water storage tanks within the County							
	Action: Conduct a feasibility study	HIGH	Ongoing	County funding	Countywide	Minimal	Water surveyor and newsletter editor	

UINTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Install new wheel lines to improve the water efficiency.	HIGH	Ongoing	Federal, and State funding	Countywide	Unknown	NRCS, UACD, USU, Extension, ect.	
	Action: Implement and enforce water laws that prohibit the use of extensive amounts of water.	HIGH	Ongoing	County funding	Countywide	Unknown	Water surveyor and newsletter editor	
	Objective: Meet current and future water needs of community. Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	Action: Develop additional water storage tanks as well as implement conservation plans.	HIGH	Ongoing	City funds, State and Federal Government loans and/or grants	Ballard City	To be determined	Ballard City staff, Professional Services, Contractors	
	Objective: Conserve culinary water by conservation							
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	City and County funds	Ballard City	Minimal	Water surveyor and newsletter editor	The city should continue to maintain and implement a tiered water rate structure.
	Objective: Meet current and future water needs of community. Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	Action: Develop additional water storage tanks as well as implement conservation plans.	HIGH	Ongoing	City funds, State and Federal Government loans and/or grants	Naples City	To be determined	Naples City staff, Professional Services, Contractors	
	Objective: Conserve culinary water by conservation							
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	City and County funding	Naples	Minimal	Water surveyor and newsletter editor	The City should continue to maintain and implement a tiered water rate structure.

UINTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Meet current and future water needs of community. Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	Action: Develop additional water storage tanks as well as implement conservation plans.	HIGH	Ongoing	City funds, State and Federal Government loans and/or grants	Vernal	To be determined	Vernal City staff, Professional Services, Contractors	
	Objective: Conserve culinary water by conservation							
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	City and County funding	Vernal	Minimal	Water surveyor and newsletter editor	The City should continue to maintain and implement a tiered water rate structure.
Earthquake	Objective: Provide for emergency response and relief.	Problem Identification: Transportation and utilities services could be severely impacted.						
	Action: Identify and maintain critical transportation and utility services.	HIGH	Ongoing	Local governments and possible grants	Countywide	Unknown-Determined by the extent of damage anticipate.	Town staff	Critical transportation systems
	Objective: Public Awareness							
	Action: Conduct a public awareness campaign.	HIGH	Ongoing	Local governments and possible grants	Countywide	Unknown	Agency personnel and volunteers	Contact DESHS earthquake program specialist. Enhance earthquake instructions in school.
	Objective: Have a study done to determine seismic resistance of structures within the county i.e. Elementary and high schools, public buildings, high traffic areas, ECT.	Problem Identification: Unknown number of seismically unsafe structures around the county.						
	Action: Structural and non-structural earthquake hazard assessment.	HIGH	Ongoing	Unknown	Countywide	Unknown	Unknown	Critical transportation systems

UINTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Flooding	Objective: Obtain Aerial photography with contours of each residential area in Uintah County.	Problem Identification: Control flooding in residential areas of Uintah County, Including but not limited to Ballard City, Naples City, and Vernal City. Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Set horizontal and vertical survey control and order aerial photography with contours for each residential area in the county.	HIGH	Ongoing	Local, State and Federal grants	Countywide	Unknown	State, Local, and possibly Federal	Aerial Topography is needed for master storm drainage design.
	Objective: Design master storm drainage plans for residential areas.							
	Action: Design master storm drainage plans to handle storm water runoff through residential areas.	HIGH	3 months to 2 years, (depending on number of areas worked on)	Grants	Countywide	\$10,000.00 per residential area, depending on size	County Staff and contracted staff.	Engineers design master storm drainage plans for the residential areas.
	Objective: Implement storm drainage plans throughout the residential areas of Uintah County.							
	Action: Implement storm drainage plans throughout the residential areas of Uintah County.	HIGH	2 years or as soon as the storm drainage plans are finished.	State and Federal grants	Countywide	Unknown, will depend on the finals plans and what is required for facilities	County and contracted staff	Construct storm drainage facilities and require all new developments to meet county storm drainage plans.
	Objective: Use technology to aid in prevention of flood loss.	Problem Identification: Control flooding in Ballard City. Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Put in an application to the Army Corps. Of Engineers for updated and revised flood plain maps for Ballard City.	HIGH	Within the next two years	FEMA, state and local.	Ballard City	Unknown	County and City Employees, Local Volunteers	
	Action: Place a restrictive clause in the City Ordinances that will prohibit any new development in the floodplain.	HIGH	Within the next year	FEMA, state and local.	Ballard City	Unknown at this time	County and City Employees, Local Volunteers	

UINTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: City building inspectors and the planning committee will revise and update building ordinances for new construction that takes place to help eliminate bridges and buildings from being washed away.	HIGH	Ongoing	FEMA, state and local.	Ballard City	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: City building inspectors and planning committee will make sure that the Zoning Ordinance is up-dated or revised every 5 to 6 years.	HIGH	Ongoing	FEMA, state and local.	Ballard City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: The County Emergency Managers will research grant opportunities for potential funding.	HIGH	Ongoing	FEMA, state and local	Ballard city	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Implement a flood ordinance that will cover the County and City with flood insurance.	HIGH	Ongoing	FEMA, state and local	Ballard City	Unknown at this time	County and Town Employees, Local Volunteers	
	Action: Implement a zoning ordinance to ensure that manufactured homes are being installed properly and inspected.	HIGH	Ongoing	FEMA, state and local	Ballard City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Enforce Zoning laws.	HIGH	Ongoing	FEMA, state and local	Ballard City	Unknown at this time	County and City Employees, Local Volunteers	Past and future flooding
	Objective: Use technology to aid in prevention of flood loss.	Problem Identification: Control flooding in Naples City. Flooding occurs from heavy rains and fast moving thunderstorms.						

UINTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Put in an application to the Army Corps. Of Engineers for updated and revised flood plain maps for the Naples City.	HIGH	Within the next two years	FEMA, state and local.	Naples City	Unknown	County and City Employees, Local Volunteers	
	Action: Place a restrictive clause in the City Ordinance that will prohibit any new development in the floodplain.	HIGH	Within the next year	FEMA, state and local	Naples City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: County and City building inspectors and the planning committee will revise and update building ordinances for new construction that takes place to help eliminate bridges and buildings from being washed away.	HIGH	Ongoing	FEMA, state and local	Naples City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: County and City building inspectors and planning committee will make sure that the Zoning Ordinance is up-dated or revised every 5 to 6 years.	HIGH	Ongoing	FEMA, state and local.	Naples City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: The County Emergency Managers will research grant opportunities for potential funding.	HIGH	Ongoing	FEMA, state and local	Naples City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Implement a flood ordinance that will cover the County and City with flood insurance.	HIGH	Ongoing	FEMA, state and local	Naples City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Implement a zoning ordinance to ensure that manufactured homes are being installed properly and inspected.	HIGH	Ongoing	FEMA, state and local	Naples City	Unknown	County and City Employees, Local Volunteers	

UINTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Enforce Zoning laws.	HIGH	Ongoing	FEMA, state and local.	Naples City	Unknown	County and City Employees, Local Volunteers	
	Objective: Use technology to aid in prevention of flood loss.							
	Action: Put in an application to the Army Corps. Of Engineers for updated and revised flood plain maps for the Vernal City.	HIGH	Within the next two years	FEMA, state and local.	Vernal City	Unknown	County and City Employees, Local Volunteers	
	Action: Place a restrictive clause in the County and City Ordinances that will prohibit any new development in the floodplain.	HIGH	Within the next year	FEMA, state and local.	Vernal City	Unknown	County and City Employees, Local Volunteers	
	Action: County and City building inspectors and the planning committee will revise and update building ordinances for new construction that takes place to help eliminate bridges and buildings from being washed away.	HIGH	Ongoing	FEMA, state and local	Vernal City	Unknown	County and City Employees, Local Volunteers	
	Action: County and City building inspectors and planning committee will make sure that the Zoning Ordinance is up-dated or revised every 5 to 6 years.	HIGH	Ongoing	FEMA, state and local	Vernal City	Unknown	County and City Employees, Local Volunteers	
	Action: The County Emergency Managers will research grant opportunities for potential funding.	HIGH	Ongoing	FEMA, state and local.	Vernal City	Unknown at this time	County and City Employees, Local Volunteers	

UINTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Implement a flood ordinance that will cover the County and City with flood insurance.	HIGH	Ongoing	FEMA, state and local.	Vernal City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Implement a zoning ordinance to ensure that manufactured homes are being installed properly and inspected.	HIGH	Ongoing	FEMA, state and local.	Vernal City	Unknown at this time	County and City Employees, Local Volunteers	
	Action: Enforce Zoning laws.	HIGH	Ongoing	FEMA, state and local	Vernal City	Unknown at this time	County and City Employees, Local Volunteers	
Insect Infestation	Objective: Reduce the impact of insects	Problem Identification: Uintah County has experienced losses in agriculture, livestock, and wildlife as a result of insect infestation.						
	Action: Spread insect bait and spray for mosquitoes	HIGH	When required	County funds, Mosquito abatement funds come from property tax	Countywide	Approximately \$3.00 per property owner per month.	County Mosquito Abatement District	
	Objective: Reduce the severity of infestations							
	Action: Apply for grants to purchase Mosquito magnets and propane tanks to run the magnets.	HIGH	Spring and summer of 2004	\$6,000.00 in grants	Countywide	\$6,000.00	County employees	Several agricultural fields surround Uintah County; these fields have been subjected to insect infestation especially during the recent years of drought.
	Objective: Reduce the threat of West Nile Virus within Uintah County							
	Action: Educate the public on the importance of vaccinating their animals.	HIGH	Spring and summer of 2004.	State and local funding	Countywide	Minimal	County employees	Several of the Uintah County residents have horses that could be affected by the West Nile virus.

UINTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Reduce the severity of infestations	Problem Identification: Periodic Grasshopper infestations more sever in the rural areas of Uintah County.						
	Action: Conduct aerial spraying to reduce infestations.	HIGH	As infestations occur.	By private individuals in most cases	Countywide	Varies, depending on acreage treated	Contractor	Many agricultural fields surround Uintah County. These fields have been subjected to insect infestation especially during the recent years of drought.
Landslide	Objective: Reduce potential landslides to residential and commercial areas.	Problem Identification: There is a potential risk to residential and commercial buildings due to rockslides, which are located in areas identified by the county as landslide risk areas.						
	Action: Assess the probability of landslides and identify specific structures at risk	HIGH	Undetermined	Property Owner	Countywide	Unknown	Unknown	Soil surveys and other engineering surveys are needed.
	Action: The county’s, city’s and town’s planning committee will review and update the zoning ordinances within the County to make sure that individuals are not constructing new homes near potential landslide areas.	HIGH	Undetermined	Unknown	Countywide	Unknown	Unknown	Hold monthly planning and zoning meetings within the town and county.
	Objective: Reduce potential landslides to residential and commercial areas.	Problem Identification: In Uintah County there are several areas namely, Blue Mountain, Diamond Mountain, and Dry Fork Canyon that could have a potential risk to pedestrians and vehicle traffic due to landslides.						
	Action: Assess the probability of landslides and identify specific structures at risk	HIGH	Undetermined	Property owner	Countywide	Unknown	Unknown	Soil surveys and other engineering surveys are needed.
Severe Weather	Objective: Reduce damage to structures through strict adherence to building codes	Problem Identification: Uintah County experiences occasional, damaging high winds and snowstorms.						
	Action: Ensure that 80 MPH wind load requirement is met by builders	HIGH	Ongoing	Fees from Building permits	Countywide	Minimal	Building Inspector	Adherence to building code requirement for tying roof structures to supporting walls will minimize damage from high wind events
	Objective: Reduce service disruptions and damage to power lines	Problem Identification: Power lines are at risk from seasonal high winds.						
	Action: Provide adequate clearances for power lines and conduct ongoing line maintenance. Maintain outage plan.	HIGH	Ongoing	Possible grants	Countywide	To be determined	County and town employees	Extreme winds have occurred, utilities disruption has occurred in past years due to damage to power poles and transmission lines by high winds.

UINTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Wildfire	Objective: Increase compliance with existing building and fire codes.	Problem Identification: Continuing non-compliance with existing building codes and fire codes.						
	Action: Develop and enforce current local, state and national codes	HIGH	Ongoing	Local, state and federal grants	Countywide	Unknown	Local, state and federal agencies	Implement and enforce rules, regulations and codes
	Objective: Educate homeowners on how to reduce risk of wildfire damage	Problem Identification: Specific areas of the county are susceptible to wildland fire danger.						
	Action: The local LEPC will provide semi-annual training for the citizens of Uintah County.	HIGH	Starting 2004	State and local	Countywide	Minimal	County	Educate the public on how to reduce the risk of wildfires.

UTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Flood	Objective: Support the National Flood Insurance Program (NFIP), Flood Map Modernization Program, to update flood risk and flood maps in the County	Problem Identification: Flooding occurs primarily from spring snow-melt and occasionally from localized summer thunderstorms. Identifying and then controlling flooding will assist in responding to flood events. Protection of life and property before, during, and after a flooding event is essential.						
	Action: Support State Floodplain Manager in the Flood Map Modernization Program	HIGH	Next three years	Dependent on if cost share is required.	Countywide	Dependent on scope of individual mapping projects.	City/County Emergency Management, County/City Engineer(s), State Floodplain Manager, Contractors.	The State has designated Utah County as the number one priority community in the State for updated flood maps. County needs to support this designation.
	Objective: Promote flood insurance throughout the County							
	Action: Create outreach document promoting flood insurance and include in local newspaper(s), libraries, and other public buildings. Especially after wildfires where post fire debris flows are of concern.	HIGH	1 year	Minimal	Countywide	Unknown	County Engineer/Floodplain Administrator, County Emergency Management, State Floodplain Manager, DES	General public is usual not aware they can purchase flood insurance even if they are located outside of a Special Flood Hazard Area. This information is especially critical when post fire debris flow potential has been identified and homes are located on alluvial fans.
	Objective: Reduce threat of unstable canals throughout the County. Identify County-wide canal systems							

UTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Map and assess for structural integrity canal systems in the County	HIGH	3-5 years	Federal grants	Countywide	Unknown	County Engineer, County Public Works, County Information and Technology, County Emergency Management	Private and Public canals are used for transportation and dispersion of water as well as flood control.
	Objective: Ensure EOC(s) are equipped to respond to flooding.							
	Action: Obtain communication equipment that will allow for timely response to flooding.	HIGH	1 year	Federal Grants	Countywide	\$30,000	County Sheriff, County Emergency Management	Support response from alternate EOC. Adequate communication capabilities are essential between all response agencies within the County.
	Objective: Minimize future flood damage in the unincorporated County	Problem Identification: Utah County is one of the smallest counties in the state terms of size and unincorporated population – with less than 5 percent of its residents live in the unincorporated county. The County does participate in the National Flood Insurance Program and the mapping is scheduled to be updated. No major rivers threaten large unincorporated urban developments. Therefore, no structural flood control projects are warranted at this time. One exception to this is the small development, south of Payson, known as Spring Lake, that is vulnerable to flooding and debris flows. A large debris flood event occurred here in 2002 (following the adjacent Mollie Wildfire in 2001 which made conditions “ripe” for this type of event). Post fire hillside stabilization measures should reduce the flood threat to Spring Lake. General flood threats in the unincorporated county include the Utah Lake tributaries, and other potential flood sources such as Utah Lake itself.						

UTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Nonstructural measures appear to be the most prudent option for the county to implement in the unincorporated areas. Zoning to regulate development of structures near all rivers, creeks, and lakes would be prudent (100 ft minimum setback or greater) as well as limiting development on alluvial fans. New development near canals should be mitigated to limit losses due to canal failures. The county should require developers in these potential hazard areas to submit site specific mitigation plans to minimize potential losses. Costs associated with mitigating the potential hazard should be borne by the developer.	HIGH	3 to 5 years	Developer	Unincorporated County	Minimal	County staff	
	Objective: Minimize future flood damage in Cedar Hills.	Problem Identification: Cedar Hills is developing rapidly – mostly with large single-family homes. It faces a significant flood threat, especially on the east side of town, from Heisett’s Hollow and adjacent, fairly large unnamed drainages to the north and south. Although not currently participating in the NFIP, this community should definitely be considered at rather high risk of flooding and should be included in any Utah County map updates or revisions.						
	Action: A potentially viable alternative would be to construct a detention/debris basin at the mouth of Heisett’s Hollow.	HIGH	Unknown	Unknown	Cedar Hills	One million	Unknown	
	Action: As with similar communities, the relatively moderate threat of flooding in many parts of the community indicates that nonstructural zoning is preferable to structural measures unless a historic flood problem is known to exist (see discussion on zoning in the County’s mitigation section above).	HIGH	Unknown	Unknown	Cedar Hills	Unknown	Unknown	
	Objective: Minimize future flood damage in Eagle Mountain.	Problem Identification: Eagle Mountain is located about 6 miles southwest of Lehi just south of Highway 73. Also one of the state’s newer communities, it is growing very rapidly. As of 2003, Eagle Mountain now has a population of about 8,000 residents compared to the 2,000 identified in the 2000 Census. Channel modifications have been made to Tickville Gulch and its tributary West Canyon Wash that flow through the north part of the community. There are also numerous unnamed drainages along the east side of Eagle Mountain that drain Lake Mountain. These drainages range in size from about 1 to 3 square miles and therefore would pose a moderate level of threat during an infrequent flood event.						
	Action: A potentially viable alternative would be to flood proof those relatively few existing low-lying structures that are subject to flooding near Tickville Gulch and West Canyon Wash.	HIGH	Unknown	Unknown	Eagle Mountain	\$10k-\$30k per structure	City & county staff	

UTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: As with similar, growing communities, the relatively low to moderate threat of flooding to most of the homes indicates that nonstructural zoning is preferable to structural measures unless an historic flood problem is known to exist (see discussion on zoning in the County’s mitigation section above).	HIGH	Unknown	Unknown	Eagle Mountain	Unknown	City & county staff	
	Objective: Minimize future flood damage in Elk Ridge.	Problem Identification: Also a relatively new community, Elk Ridge is situated just southeast of Payson. Elk Ridge is flanked by Loafer Canyon on the east and other unnamed drainages through the rest of the community. Development for the most part, appears to be sited up and away from the channels. However if the channels/culverts were to become blocked by debris or if wildfire were to occur in the surrounding mountain, devastating flood, mud, and debris flows are possible. (A wildfire was experienced in the area during the summer of 2003.)						
	Action: A potentially viable alternative would be to flood proof those relatively few existing low-lying structures that are subject to flooding.	HIGH	Unknown	Unknown	Elk Ridge	\$10k-\$30k per structure	City & county staff	
	Action: As with similar, growing communities, the moderate threat of flooding indicates zoning would be less costly than structural measures (unless an historic flood problem is known to exist -see discussion on zoning in the County’s mitigation section above).	HIGH	Unknown	Unknown	Elk Ridge	Unknown	City & county staff	
	Objective: Minimize future flood damage in Goshen.	Problem Identification: Although not participating, this community appears to have little flood threat - unless Goshen Reservoir has problems in the future (earthquake or slope stability issues).						
	Action: As with similar small communities, the relatively low threat of flooding indicates that nonstructural zoning is preferable to structural measures unless a historic flood problem is known to exist (see discussion on zoning in the County’s mitigation section above).	HIGH	Unknown	Unknown	Goshen	Unknown	City & county staff	
	Objective: Minimize future flood damage in Santaquin.	Problem Identification: Although Santaquin has a NSFHA designation based on its old town boundaries, it clearly has a very high flood, mud, and debris flow threat in the newer part of town – east of Interstate 15 – that needs to be addressed. It appears that virtually all development east of I-15 is at risk due to its location right on top of major alluvial fans. They are known as Tributaries 4, 5, and 6 (north to south). Although development for the most part, appears to be sited up and away from the channels, during the 2002 debris flow event (preceded by the 2001 Mollie Wildfire), the channels became blocked by debris and a devastating flood, with mud and debris flows occurred – putting the lives of many in community at very high risk. (Amazingly no one was injured or killed in the disaster.) Debris flow boundaries delineated by the Utah Geological Survey (attached) should be used as a minimum to approximate the flood threat until detailed analyses can be made.						

UTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Detention/debris basins are urgently needed if the town is going to continue to allow development “in harms way”.	HIGH	Unknown	Unknown	Santaquin	Approximately \$500k - \$1 million each – Total \$2.5 million	City, Federal agency staff.	
	Action: As with similar growing communities, nonstructural zoning is less costly than structural measures to prevent future damages (see discussion on zoning in the County’s mitigation section above).	HIGH	Unknown	Unknown	Santaquin	Unknown	City staff.	
	Objective: Minimize future flood damage in Saratoga Springs.	Problem Identification: Like Santaquin, this community has also grown very rapidly and is also designated as a NSFHA. It appears to face a moderate flood threat from Tickville Gulch on the north and at least a dozen other drainages along the east side of town (in addition to the threat from Utah Lake).						
	Action: A potentially viable alternative would be to flood proof those relatively few existing low-lying structures that are subject to flooding.	HIGH	Unknown	Unknown	Saratoga Springs	\$10k-\$30k per structure	City staff	
	Action: As with similar, growing communities, the low to moderate threat of flooding indicates that nonstructural zoning is preferable to structural measures unless an historic flood problem is known to exist (see discussion on zoning in the County’s mitigation section above).	HIGH	Unknown	Unknown	Saratoga Springs	Unknown	City staff, DES	
	Objective: Minimize future flood damage in Vineyard	Problem Identification: Although there is no flood threat from any rivers, creeks, or streams, Utah Lake is within the corporate boundary-leaving Vineyard at some risk. A 1997 COE reconnaissance study (Provo River and Tributaries) determined that the 100-yr elevation of Utah Lake would be approximately 4494.5 MSL. Most of Vineyard is well above this elevation so the relative risk is minimal.						
	Action: As with similar communities, the relatively low threat of flooding indicates that nonstructural zoning is preferable to structural measures unless an historic flood problem is known to exist (see discussion on zoning in the County’s mitigation section above).	HIGH	Unknown	Unknown	Vineyard	Minimal	City & DES staff	
	Objective: Minimize future flood damage in Woodland Hills.	Problem Identification: Also a relatively new community, Woodland Hills is situated southeast of Payson, in the southeast corner of Utah County. Woodland Hills is flanked by Maple Canyon on the east and is threatened by Broad and Snell Hollows, as well as another unnamed drainage through the rest of the community. Development for the most part, appears to be sited up and away from the channels. However if the channels/culverts were to become blocked by debris or if wildfire were to occur in the surrounding mountain, devastating flood, mud, and debris flows are possible – putting the community at very high risk.						

UTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: A potentially viable alternative would be to flood proof those relatively few existing low-lying structures that are subject to flooding.	HIGH	Unknown	Unknown	Woodland Hills	\$10k-\$30k per structure	City staff	
	Action: As with similar, growing communities, the moderate threat of flooding indicates that nonstructural zoning would be preferable to structural measures (and less costly - unless an historic flood problem is known to exist - see discussion on zoning in the County’s mitigation section above).	HIGH	Unknown	Unknown	Woodland Hills	Minimal	City & DES staff	
Dam Failure	Objective: Obtain most up to date and accurate information on dams in County to protect lives and property from dam failure.	Problem Identification: National statistics show that overtopping due to inadequate spillway design, debris blockage of spillways, or settlement of the dam crest account for 34% of all dam failures. Foundation defects, including settlement and slope instability, account for 30% of all failures. Piping and seepage cause 20% of national dam failures. This includes internal erosion caused by seepage, seepage and erosion along hydraulic structures, leakage through animal burrows, and cracks in the dam. The remaining 16% of failures are caused by other means. Deer Creek and Jordanelle Dams are of specific concern in the County.						
	Action: Include dam inundation maps in current County EOP.	MED	3-5 years	Undetermined	Countywide	\$ 10,000.00	County Emergency Management, BOR and State Dam Safety	Maps are not current and need to reflect impact on new residential and commercial properties. Utah Division of Water Rights Dam Safety Section is currently reviewing the maps as well as digitizing them. Digitized dam failure inundation maps will aid Utah County in future emergency management planning.
	Objective: Early warning systems (sirens) are critical to protecting lives from Jordanelle/Deer Creek dam failure.							
	Action: Continue to test warning sirens along Provo River	MED	Ongoing	BOR and County, Provo and Orem City	Countywide	Unknown	County/City Emergency Management and Public Works, UDOT, BOR, Sheriff and local Police.	Current siren system needs to be tested on a regular basis and allow local responders to participate in the testing. This will create better planning and awareness at the local level.

UTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Wildfire	Objective: Increase and ensure compliance with existing building and fire codes, especially in the rural areas of the County where secondary residences are upgraded or new construction.	Problem Identification: Non-compliance with Firewise development practices.						
	Action: Develop and enforce current local, state and national codes	HIGH	Ongoing	Local, state and federal grants	Countywide	Unknown	Local, state and federal agencies	Implement and enforce rules, regulations and codes
	Objective: Educate homeowners on how to reduce risk of wildfire damage	Problem Identification: Building continues to be of concern in Urban Wildfire Interface Areas (URWIN). Especially in the following areas: Identified high hazard areas along foothills adjacent to Wasatch Front, eastern Utah County adjacent to Highway 6 to include Solider Summit, and areas along Highway 89 South into Sanpete County						
	Action: Conduct an education program (Firewise) on reducing wildfire risks	HIGH	Ongoing	County	Countywide	Minimal	Fire District(s), County Emergency Management, State FFSL	Educate homeowners using newsletters and personal contacts of the importance of clearing combustibles from perimeters of their homes. Currently, Sundance is the only recognized Firewise Community in the County.
	Action: Work with State Forestry Fire and State Lands and US Forest Service to identify areas where fire breaks and be designed, implemented and maintained.	HIGH	3-years	County, State and Federal	Countywide	Unknown	Private land owners, County Public Works, County Emergency Management, Fire District, State Forestry Fire and State Lands, US Forest Service	Wildfires have the potential to threaten high-density population communities along the Wasatch Front.

UTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Using Sundance as a model Firewise community, promote the Firewise Program in the County.	HIGH	Ongoing	County, State and Federal Grants	Countywide	Minimal	County Emergency Management, State FFSL, US Forest Service	It is essential to continue to promote wildfire mitigation actions and educate homeowners on wildfire risks.
	Objective: Reduce potential landslide risk on commercial, residential structures, and infrastructure (pipelines and utilities) in areas of known landslide potential.	Problem Identification: There is a potential risk to structures located in areas identified by the MAG GIS as landslide risk areas.						
	Action: Assess the probability of landslides and identify specific structures and infrastructure at risk especially in the historical Thistle Landslide area.	MED	Undetermined	County Engineer, County Emergency Management, County Public Works, Utilities, UDOT, Developers and Property Owners	Countywide	Unknown	Unknown	Additional soil surveys and other engineering surveys are needed.
	Action: Include landslide data in County Information and Technology GIS system and include on County website.	MED	Undetermined	County, possible grants	Countywide	To be determined	County GIS Staff, UGS,	General public and developers will have access to landslide data.
	Objective: Reduce loss of life and limit damage to property. Provide education on seismic hazards and mitigation to Utah County residents and homeowners.	Problem Identification: Utah County will be impacted directly from an earthquake on the Wasatch Fault. There are also other smaller faults that could generate significant damage. Transportation and utilities services within County could be severely impacted.						
	Action: Develop and promote earthquake public education program.	HIGH	Immediate	County/State	Countywide	\$2500.00	County Emergency Management, State Earthquake Program	Provide information to residents and business owners to encourage them to take appropriate measures to make homes and businesses less susceptible to damage from ground shaking. Education pertaining to earthquakes will be part of a holistic natural hazards education program, including wildfires, flooding, sever weather, and landslides.

UTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Through the CERT Program, educate community on earthquake damage prevention practices							
	Action: Educate the public on damage prevention practices for earthquakes	MED	2 years	State and Federal Grants from state and Federal governments	Countywide	\$50,000-\$75,000	County Emergency Management and volunteers	Continue to support C.E.R.T. program in the County. Earthquakes preparedness techniques and guidelines can be utilized in an all-hazard approach to personal and individual preparedness.
	Objective: Increase quality and quantity of available natural hazards data to facilitate better decision-making.							
	Action: Update fault zone and liquefaction maps for the county to a better scale	MED	Two Years	Undetermined, potentially USGS or UGS	Countywide	Minimal	USGS & UGS Staff	Provide updated, detailed maps to city and county planning groups, emergency managers, and public to assist them in making educated decisions by understanding earthquake danger zones.
	Action: Develop better ground acceleration maps for building officials	MED	Three Years	UGS, USGS, State Earthquake Program, Utah Seismic Safety Commission	Countywide	Unknown, some cost share for printing.	UGS	Current ground accelerations maps are too small and difficult to read. Better maps create better decision-making.
Drought	Objective: Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on community culinary water resources.						
	Action: Educate the public on the need to be water wise	LOW	Ongoing	State and Federal	Countywide	Minimal	Water Districts	Use a newsletter to educate the public
	Action: Coordinate with current water systems and develop a secondary water systems plan for drought	LOW	Immediate	Undetermined local source	Countywide	Minimal	Water Districts	To reduce the demand on culinary systems it is proposed that more communities study the possibility of using secondary water for agricultural uses such as irrigation and lawn watering.
Severe Weather	Objective: Protect County from adverse affects of severe weather	Problem Identification: Snowstorms, summer thunderstorms, hail, and high winds over northern Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists.						

UTAH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: County participate in the StormReady program.	HIGH	2 years	State and Federal	Countywide	Minimal	City and County Emergency Management	Set up within the county emergency management and encourage all cities to participate, all requirements of the National Weather Service StormReady program.
	Action 2: Encourage avalanche preparedness for county backcountry users.	HIGH	Ongoing	Funding already in place	Countywide	Minimal	County Emergency Management State Hazard Mitigation Team members, Utah Avalanche Forecast Center.	Avalanches and avalanche preparedness is not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry. While the avalanche terrain is mainly on US Forest Service land the search and rescue for the lost individual in more often than not coordinated by emergency managers with search parties comprised of county and city staff. Introductory avalanche awareness training could lessen the costs to Utah County and the cities within the county. Most avalanche victims die in avalanches started by themselves or someone in there party. Thus, education can limit the number of avalanche related searches each year.
	Action: Assess EOCs to ensure they are grounded lightning, to include buildings with towers, etc.	HIGH	2-3 years	Federal Grants	Countywide	Unknown	County Emergency Management	Alternate EOC(s), Sheriff’s Dispatch, Command Vehicle(s)and associated equipment need to be protected from severe weather events including lightning.

WASATCH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Flooding	Objective: Encourage 100% participation in the National Flood Insurance Program (NFIP).	Problem Identification: Flood occurs primarily from spring snow-melt and occasionally from localized summer thunderstorms. Identifying and then controlling flooding will assist in responding to flood events. Protection of life and property before, during, and after a flooding event is essential.						
	Action: Assist the Town of Wallsburg in joining NFIP	HIGH	1-year	None required	Wallsburg	None	County Emergency Management, County Engineer, State Floodplain Manager	FEMA has yet to map the Town of Wallsburg with Special Flood Hazards (SFHA). The community does not participate in the NFIP therefore flood insurance is not available.
	Objective: Promote flood insurance throughout the County							
	Action: Create outreach documents promoting flood insurance for inclusion in local newspaper(s), libraries, and other public buildings.	HIGH	1-year	Minimal	Countywide	Minimal	County Engineer, State Floodplain Manager, DES	General public is usual not aware they can purchase flood insurance.
	Objective: Reduce threat of unstable canals throughout the County. Identify County-wide canal systems							
	Action: Map and assess for structural integrity canal systems in the County	HIGH	3-5 years	Federal grants	Countywide	Unknown	County Engineer, County Public Works, County Information and Technology, County Emergency Management	Private and Public canals are used for transportation and dispersion of water as well as flood control.
	Objective: Reduce flooding threat in Midway, Heber, Charleston, and Wallsburg.							

WASATCH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Clear debris and other material from streams prior to spring snow melt.	HIGH	Ongoing	Unknown	Countywide	Unknown	County Public Works	Most flooding is attributed to debris-laden streams.
	Objective: Ensure EOC(s) is equipped to respond to flooding.							
	Action: Obtain communication equipment that will allow for timely response to flooding.	HIGH	1-year	Federal Grants	Wasatch County	\$30,000	County Sheriff, County Emergency Management	An alternate EOC is being considered in Kamas. An adequate communication capability is essential between all response agencies within the County.
	Objective: Support updating of flood hazard data							
	Action: Support and encourage participation in the NFIP Flood Map Mod Program.	HIGH	Ongoing	Federal Funding	Countywide	Unknown	County Engineer, State Floodplain Manager	Accurate flood maps assist the County in the administration of the NFIP and better reflects flood risk within the County.
Wildfire	Objective: Increase compliance with existing building and fire codes.	Problem Identification: Non-compliance with best firewise practices.						
	Action: Develop and enforce current local, state and national codes	HIGH	Ongoing	Local Budgets	Countywide	Unknown	Local, state and federal agencies	Implement and enforce rules, regulations and codes
	Objective: Educate homeowners on how to reduce risk of wildfire damage	Problem Identification: Building continues to be of concern in Urban Wildfire Interface Areas (URWIN).						

WASATCH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Conduct an education program (Firewise) on reducing wildfire risks	HIGH	Ongoing	County	Countywide	Minimal	Fire District(s), County Emergency Management, and State FFSL	Educate homeowners using newsletters and personal contacts of the importance of clearing combustibles from perimeters of their homes and defensible space. The Utah Living With Fire Committee has created a Utah specific wildfire education-training package. GIS analysis conducted by Mountainland Association of Government indicates the county has 775 structures costing \$116,250,000 vulnerable to wildfire in Wasatch County.
	Action: Complete mitigation detailed in the wildfire plan prepared for the community of Interlaken Estates.	HIGH	3-years	County, State and Federal	Interlaken Estates	Unknown	Private land owners, Interlaken Community Fire Council, County Public Works, County Emergency Management, Fire District, State Forestry Fire and State Lands, US Forest Service	Wildfires have the potential to threaten this area. These community specific mitigation strategies will assist in protecting the community.
	Action: Continue to coordinate with current Firewise communities.	HIGH	Ongoing	County, State and Federal Grants	Urwin Communities in Wasatch County	Minimal	County Emergency Management, State FFSL, US Forest Service	It is essential we continue to promote wildfire mitigation actions and educate homeowners on wildfire risks.

WASATCH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Landslides	Objective: Reduce potential landslide risk on commercial, residential structures, and infrastructure (pipelines and utilities) in areas of known landslide potential.	Problem Identification: There is a potential risk to structures located in areas identified by the MAG GIS analysis and UGS study as landslide risk areas. Several areas in Wasatch County are particularly vulnerable they include the Provo river area down stream from Deer Creek Reservoir, Timber Lakes area, and several communities on the west side of Heber Valley.						
	Action 1: Assess the probability of landslides and identify specific structures and infrastructure at risk	MED	Undetermined	County Engineer, County Emergency Management, County Public Works, Utilities, Developers and Property Owners	Countywide		UGS, USGS	Soil surveys and other engineering surveys are needed.
	Action: Include landslide data in County Information and Technology GIS system and include on County website.	MED	Undetermined	County, possible grants	Countywide	To be determined	County GIS Staff, UGS,	General public and developers will have access to landslide data.
	Action: Map landslide risk areas for inclusion in site development ordinances. These ordinances should include at a minimum a natural hazards disclosure clause.	MED	Undetermined	County Engineer, County Emergency Management, County Public Works, Utilities, Developers and Property Owners	Countywide	Unknown	Unknown	Soil surveys and other engineering surveys are needed.
Earthquake	Objective: Provide for emergency response and relief.	Problem Identification: Wasatch County will be impacted indirectly from an earthquake on the Wasatch Front. Transportation and utilities services to and from the County could be severely impacted.						
	Action: Identify and maintain critical transportation and utility services	LOW	Ongoing	Grants	Countywide	Unknown Determined by the extent of anticipated damage.	County	Critical transportation systems need to be maintained.
	Objective: Through the CERT Program, educate community on earthquake damage prevention practices	Problem Identification: Lack of public awareness about earthquake damage prevention practices.						

WASATCH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Educate the public on damage prevention practices for earthquakes	MED	2-years	State and Federal Grants from state and Federal governments	Countywide	\$50,000-\$75,000	County Emergency Management and volunteers	Continue to support C.E.R.T. program in the County. Earthquakes preparedness techniques and guidelines can be utilized in an all-hazard approach to personal and individual preparedness.
Drought	Objective: Conserve culinary water by educating the public	Problem Identification: Cyclical periods of drought place a strain on community culinary water resources.						
	Action: Educate the public on the need to be water wise	LOW	Ongoing	State and Federal	Countywide	Minimal	Water Districts	Use a newsletter to educate the public
	Action: Coordinate with current water systems and develop a secondary water systems plan for drought	LOW	Immediate	Undetermined local source	Countywide	Minimal	Water District	To reduce the demand on culinary systems it is proposed that more communities study the possibility of using secondary water for agricultural uses such as irrigation and lawn watering.
Severe Weather	Objective 1.1 Protect County from adverse affects of severe weather	Problem Identification: Snowstorms, summer thunderstorms, hail, and high winds over northern Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists.						
	Action: County participation in the Storm Ready program.	HIGH	2-years	State and Federal	Countywide	Unknown	City and County Emergency Management	Set up within the county emergency management and encourage all cities to participate, all requirements of the National Weather Service Storm Ready program.

WASATCH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Encourage avalanche preparedness and education for county backcountry users.	HIGH	1-year	In place state and federal funding	Countywide	Minimal	County Emergency Management State Hazard Mitigation Team members, Utah Avalanche Forecast Center.	Avalanches and avalanche preparedness is not often considered when discussing mitigation on the county or city level, yet several people die each year in Utah’s backcountry, these figures when taken cumulatively result in avalanches be Utah’s most deadly natural disaster. While the avalanche terrain is mainly on US Forest Service land the search and rescue efforts are conduct by City and County staff for the lost individual. Introductory avalanche awareness training could lessen search and rescue costs to Wasatch County and the cities within the county. Most avalanche victims die in avalanches started by themselves or someone in there party. Thus, education can limit the number of avalanche related searches each year.
	Action: Assess EOCs to ensure they are grounded lightning, to include buildings with towers, etc.	HIGH	2-3 years	Federal Grants	Countywide	Unknown	County Emergency Management	Alternate EOC(s), Sheriff’s Dispatch, Command Vehicle(s)and associated equipment need to be protected from sever weather events including lightning.
Dam Failure	Objective: Obtain most up to date and accurate information on dams in County to protect lives and property from dam failure.	Problem: National statistics show that overtopping due to inadequate spillway design, debris blockage of spillways, or settlement of the dam crest account for 34% of all dam failures. Foundation defects, including settlement and slope instability, account for 30% of all failures. Piping and seepage cause 20% of national dam failures. This includes internal erosion caused by seepage, seepage and erosion along hydraulic structures, leakage through animal burrows, and cracks in the dam. The remaining 16% of failures are caused by other means. The towns of Charleston, Midway, and Heber are down stream from the Jordanelle Reservoir. Dam failure inundation study show significant flooding to all three towns.						

WASATCH COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Include dam inundation maps in current County EOP.	MED	3-5 Years	Undetermined	Charleston, Midway, Heber.	\$ 10,000.00	County Emergency Management, BOR and State Dam Safety	Maps are not current and need to reflect impact on new residential and commercial properties. Utah Division of Water Rights Dam Safety Section is currently reviewing the maps as well as digitizing them. Digitized dam failure inundation maps will aid Wasatch County in future emergency management planning.
	Action: Evaluate need and associated cost to have dam failure early warning sirens for communities of Charleston, Heber, and Midway.	MED	3- 5 years	Undetermined	Charleston, Heber, and Midway	Unknown	County Emergency Management, County Public Works, and BOR	Charleston, Heber, and Midway could be directly impacted by a dam failure.
	Action: Maintain rigorous dam safety inspections.	MED	Ongoing	Operating budgets of inspecting agencies.	Charleston, Heber, and Midway	Unknown	County Emergency Management, County Public Works, and BOR	Charleston, Heber, and Midway could be directly impacted by a dam failure.

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Wildfire	Objective: Increase compliance with existing building and fire codes.	Problem Identification: Continuing non-compliance with existing building codes and fire codes.						
	Action: Develop and enforce current local, state and national codes	HIGH	Ongoing	Local, state and federal grants	Countywide	Unknown	Local, state and federal agencies	Implement and enforce rules, regulations and codes
	Objective: Educate homeowners on how to reduce risk of wildfire damage	Problem Identification: Approximately 10 homes are at risk from wildfire						
	Action: Conduct an education program on reducing wildfire risks	HIGH	Ongoing	Enterprise City	Enterprise City	Minimal	Fire Chief	Educate homeowners using newsletters and personal contacts of the importance of clearing combustibles from perimeters of their homes
	Objective: Reduce threat of utilities interruption due to a wildland fire	Problem Identification: Fire is a threat to power facilities and transmission lines						
	Action: Safeguard facilities and poles	HIGH	Ongoing	Local	Hurricane	Undetermined	Public Works Crews, Hurricane City Fire Department, 138 Task Force	Power and telephone transmission lines in Hurricane City travel via overhead lines through many developed and undeveloped areas. A wildland fire could disrupt services to customers by igniting poles or arcing. Facilities and transmission lines need to be evaluated and plans implemented to safeguard facilities and poles. Plans must be developed to isolate affected areas and maintain services by rerouting services to customers.
	Objective: Reduce threat of damage due to a wildland fire	Problem Identification: Wildfire is a threat to the west side of the City (west end of Kayenta)						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Develop a fire break road between Ivins and the Shivwits Indian Reservation	HIGH	1-year	Private, City, State, Federal	Ivins	\$10,000 with survey	Private land owners, Ivins, Reservoir water users, Ivins Public Safety	Past wildfires have been a threat from the west end of the county. A fire access road needs to be provided between Ivins City and the Shivwits Indian Reservation. This will assist in protecting the community by providing a firebreak.
	Objective: Reduce threat of damage due to a wildland fire	Problem Identification: Wildfire is a threat to several large tracts of property in the community						
	Action: Educate the residents of the community on how to make their properties fire safe.	HIGH	Periodic	U.S. Forest Service	New Harmony	Minimal to town	Town Staff, U.S. Forest Service	Wildfire is a periodic problem in the New Harmony area, with the Sequoia Fire in 2002 burning 8,200 acres nearby. A few large tracts in town containing residences could have problems from similar fires in the future. The residents of the Town need to be alerted to the dangers of wildfire and be given measures, which they can utilize to minimize damage.
	Objective: Reduce threat of damage due to a wildland fire	Problem Identification: Wildfire is a threat due to grasslands drying out during extended dry periods.						
	Action: Educate residents of the value of maintaining firebreaks around their homes	HIGH	Immediate	Local, BLM	Rockville	Minimal	Town, BLM	Rockville lies at the west end of Zion Canyon and is an area of large trees surrounded by open fields of grass bordered by rocky slopes. During extended dry periods the grasslands dry out and represent a potential fire hazard.
	Objective: Reduce threat of damage due to a wildland fire	Problem Identification: Interface zones along the Virgin River and other river drainages are causing an exposure to wildfire threat.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Thin or remove vegetation causing exposure problem.	HIGH	1-year	Moderate, no local funds	St. George	Moderate	No local, possible assistance with BLM/U.S. Forest Service	Vegetative areas along the Virgin River have been subjected to several fires over a number of years. The most recent one damaged several properties and structures. This interface area needs to be thinned and separated from exposure to structures.
	Objective: Reduce threat of damage due to a wildland fire	Problem Identification: The Zion River RV park and power facilities and telephone poles are at greatest risk from wildfire.						
	Action: Thin vegetation along river or create a fire break to protect nearby facilities.	HIGH	Ongoing	Moderate, BLM, local funds	Virgin	Moderate	No local, possible assistance with BLM	The dense river bottom cover provides an ideal location for a wildfire. This interface area needs to be thinned and separated with a firebreak to reduce or eliminate exposure to structures. Redundant communications systems should be installed to provide necessary coverage.
	Objective: Thin out Virgin River vegetation (tamarisks) and create fire breaks	Problem Identification: Thick vegetation, mostly tamarisks, along Virgin River near homes.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Cut and chip tamarisks for fire breaks.	HIGH	2-years	Grants	Washington City	\$30,000 - \$40,000	Washington City Fire Dept. and BLM fuels crew	Cut 50 ft. to 60 ft. fire breaks from banks to river. Thin out vegetation near homes by river. Major issues surrounding this objective are that the U.S. Army Corps of Engineers wants to preserve vegetation for bank stabilization and it would reduce wildlife habitat. The general public will support fire safety, but those concerned with the existing environment will likely not favor the reduction of wildlife habitat. The tamarisks, however, are an introduced, water-guzzling, weed-type tree. While this project is good for fire safety of the homes nearby, the U.S. Army Corps of Engineers will likely want to preserve vegetation for bank stabilization.
Landslide	Objective: Reduce potential landslide risk on commercial and residential structures in areas of known landslide potential.	Problem Identification: There is a potential risk to structures located in areas identified by the FCAOG GIS as landslide risk areas.						
	Action: Assess the probability of landslides and identify specific structures at risk	HIGH	Undetermined	Property owner	Countywide	Unknown	Unknown	Soil surveys and other engineering surveys are needed.
	Objective: Provide for a second means of supplying culinary water to the residents of La Verkin.	Problem Identification: There is potential risk of landslide affecting Toquerville Spring, which would severely impact water delivery.						
	Action: Establish and maintain a means to readily connect the City's culinary water users to alternative water sources.	HIGH	Undetermined	Local Governments and possible grants/loans	La Verkin	To be determined	LaVerkin City, Toquerville City, Hurricane City	In case Toquerville Springs is damaged, the communities of LaVerkin and Toquerville would need to connect to Cottam Well and Hurricane City water sources. Use of water would need to be curtailed to essential services only.

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Minimizing construction in areas of rockfall and landslides.	Problem Identification: Several homes within Rockville are located close to rocky slopes and are subjected to potential landslides and rockfalls.						
	Action: Continue to modify land use code to reduce threat to residences.	HIGH	Undetermined	Not applicable	Rockville	Not applicable	Rockville Town Planning Commission, Rockville Town Council	In October 2001, a 16 foot wide boulder that came loose from a nearby hillside rolled into a home in Rockville. The huge rock destroyed the homeowner’s bedroom and bathroom and came with 2ft of his head as he slept. According to Dixie State College geologist Professor Kelly Bringham, the rock beneath the sandstone is shale and is very weak and boulders break off and just occasionally tumble down.
	Objective: Remove risk to homes by removing rocks.	Problem Identification: Rockfall areas are next to residential areas.						
	Action: Remove large rocks overhanging existing developments.	HIGH	Undetermined	Not applicable	St. George	Not Applicable	City Community Development Staff, Planning Commission, City Council	There are several areas in St. George where rocks overhang existing developments, i.e. in the Bloomington development. Developments should include removal or remediation of large rock areas from being dislodged by earthquake or rains.
	Objective: Remove rockfall risk to areas being considered for new development.	Problem Identification: Rockfall areas are next to residential areas.						
	Action: Remove potential rock hazards prior to building homes.	MED	5-years	None	St. George	Unknown	City Planning Department	Prior to building, require builder/owner to secure or remove possible rock hazard.
	Objective: Provide for a second means of supplying culinary water to the residents of Toquerville.	Problem Identification: There is potential risk of landslide affecting Toquerville Spring, which would severely impact water delivery.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Establish and maintain a means to readily connect the City’s culinary water users to alternative water sources.	HIGH	Undetermined	Local Governments and possible grants/loans	Toquerville	To be determined	Toquerville City, LaVerkin City, Hurricane City	In case Toquerville Springs is damaged, the communities of Toquerville and LaVerkin would need to connect to Cottam Well and Hurricane City water sources. Use of water would need to be curtailed to essential services only.
	Objective: Provide for a secondary means of providing water and essential services	Problem Identification: There is potential risk of landslide on the hillside along S.R. 9 near the Jesse Lee residence and the 101 Rancho area of Virgin, as well as the well at Anderson Junction along with the water lines running from there to the town.						
	Action: Develop plan for providing essential services should access be disrupted and water disrupted.	HIGH	Ongoing	Local Governments and possible grants	Virgin	To be determined	Town of Virgin, Utah Department of Transportation	In case damage to the Anderson Junction well/spring, the communities of Virgin, LaVerkin and Toquerville would be curtailed to use of water for essential services only. The potential for damage to the 101 Rancho area would necessitate a plan to reroute traffic and repair the damage to S.R. 9. Damage repair would be coordinated as needed.
Flood	Objective: Obtain Aerial photography with contours of each residential area in Washington County.	Problem Identification: Control flooding in unincorporated residential areas of Washington County, (Approximately 12 areas). Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Set horizontal and vertical survey control and order aerial photography with contours for each residential area in the county.	HIGH	3 months to 2 years (depending on number of areas).	Local, State and Federal grants.	Countywide	\$7000.00 per residential area, depending on size	County Staff and contracted staff.	Aerial Topography is needed for master storm drainage design.
	Objective: Design master storm drainage plans for residential areas.							
	Action: Design master storm drainage plans to handle storm water runoff through residential areas.	HIGH	3 months to 2 years, (depending on number of areas worked on)	Grants	Countywide	\$10,000.00 per residential area, depending on size	County Staff and contracted staff.	Engineers design master storm drainage plans for the residential areas.

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Implement storm drainage plans throughout the residential areas of Washington County.							
	Action: Implement storm drainage plans throughout the residential areas of Washington County.	HIGH	2 years or as soon as the storm drainage plans are finished.	State and Federal grants	Countywide	Unknown, will depend on the final plans and what is required for facilities	County and contracted staff	Construct storm drainage facilities and require all new developments to meet county storm drainage plans.
	Objective: Implement storm drainage plans throughout the residential areas of Diamond Valley.	Problem Identification: Control flooding in the Diamond Valley subdivision of Washington County. Flooding occurs from heavy rains and fast moving thunderstorms. Aerial photography completed and the planning phase is almost completed.						
	Action: Implement storm drainage plans throughout the residential areas of the Diamond Valley subdivision.	HIGH	2-year	State and Federal grants	Countywide	Unknown, will depend on the final plans and what is required for facilities	County and contracted staff	Construct storm drainage facilities and require all new developments to meet county storm drainage plans.
	Objective: Implement storm drainage plans throughout the residential areas of Winchester Hills.	Problem Identification: Control flooding in the Winchester Hills subdivision of Washington County. Flooding occurs from heavy rains and fast moving thunderstorms. Aerial photography completed and the planning phase is almost completed.						
	Action: Implement storm drainage plans throughout the residential areas of Winchester Hills.	HIGH	2-years	State and Federal grants	Countywide	Unknown, will depend on the final plans and what is required for facilities	County and contracted staff	Construct storm drainage facilities and require all new developments to meet county storm drainage plans.
	Objective: Obtain Aerial photography with contours of each residential area in Apple Valley.	Problem Identification: Control flooding in the Apple Valley subdivision of Washington County. Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Set horizontal and vertical survey control and order aerial photography with contours for each residential area in the county.	HIGH	3 months to 2 years (depending on funding).	Local, State and Federal grants	Countywide	\$7,000.00 per residential area, depending on size	County Staff and contracted staff.	Aerial Topography is needed for master storm drainage design.
	Objective: Design master storm drainage plans for residential areas.							

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Design master storm drainage plans to handle storm water runoff through residential areas.	HIGH	3 months to 2 years, (depending on number of areas worked on)	Grants	Countywide	\$10,000.00 per residential area, depending on size	County Staff and contracted staff.	Engineers design master storm drainage plans for the residential areas.
	Objective: Implement storm drainage plans throughout the residential areas of Washington County.							
	Action: Implement storm drainage plans throughout the residential areas of Washington County.	HIGH	2 years or as soon as the storm drainage plans are finished.	State and Federal grants	Countywide	Unknown, will depend on the final plans and what is required for facilities	County and contracted staff	Construct storm drainage facilities and require all new developments to meet county storm drainage plans.
	Objective: Obtain Aerial photography with contours of each residential area in Dammeron Valley.	Problem Identification: Control flooding in the Dammeron Valley subdivision of Washington County. Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Set horizontal and vertical survey control and order aerial photography with contours for each residential area in the county.	HIGH	3 months to 2 years (depending on funding).	Local, State and Federal grants	Countywide	\$7,000.00 per residential area, depending on size	County Staff and contracted staff.	Aerial Topography is needed for master storm drainage design.
	Objective: Design master storm drainage plans for residential areas.							
	Action: Design master storm drainage plans to handle storm water runoff through residential areas.	HIGH	3 months to 2 years, (depending on completion of photography)	Grants	Countywide	\$10,000.00 per residential area, depending on size	County Staff and contracted staff.	Engineers design master storm drainage plans for the residential areas.
	Objective: Implement storm drainage plans throughout the residential areas of Washington County.							
	Action: Implement storm drainage plans throughout the residential areas of Washington County.	HIGH	2 years or as soon as the storm drainage plans are finished.	State and Federal grants	Countywide	Unknown, will depend on the final plans and what is required for facilities	County and contracted staff	Construct storm drainage facilities and require all new developments to meet county storm drainage plans.

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Obtain Aerial photography with contours of each residential area in Sky Ranch.	Problem Identification: Control flooding in Sky Ranch Subdivision of Washington County. Flooding occurs from heavy rains and fast moving thunderstorms.						
	Action: Set horizontal and vertical survey control and order aerial photography with contours for each residential area in the county.	HIGH	3 months to 2 years (depending on number if areas).	Local, State and Federal grants	Countywide	\$7000.00 per residential area, depending on size	County Staff and contracted staff.	Aerial Topography is needed for master storm drainage design.
	Objective: Design master storm drainage plans for residential areas.							
	Action: Design master storm drainage plans to handle storm water runoff through residential areas.	HIGH	3 months to 2 years, (depending on number of areas worked on)	Grants	Countywide	\$10,000.00 per residential area, depending on size	County Staff and contracted staff.	Engineers design master storm drainage plans for the residential areas.
	Objective: Implement storm drainage plans throughout the residential areas of Washington County.							
	Action: Implement storm drainage plans throughout the residential areas of Washington County.	HIGH	2 years or as soon as the storm drainage plans are finished.	State and Federal grants	Countywide	Unknown, will depend on the finals plans and what is required for facilities	County and contracted staff	Construct storm drainage facilities and require all new developments to meet county storm drainage plans.
	Objective: Reduce the threat of flood damage to structures in the City	Problem Identification: There is localized flooding near 100 East Main Street and 300 South Center Street. These threaten 2 commercial buildings and 3 residences.						
	Action: Catch and channel flood waters from the high school and send them to Spring Creek.	HIGH	3-5 years	Washington County School District, FEMA funds, City Funds	Enterprise	\$70,000-\$90,000	City and Contractor	This will help alleviate both the 100 East and the 300 South problems.
	Objective: Reduce the threat of flood damage to structures in the City	Problem Identification: There is localized flooding near 100 East Main Street and 300 South Center Street. These threaten 2 commercial buildings and 3 residences.						
	Action: Divert storm water at 200 East and Main Street into existing storm drain catch basin at 200 East 100 North.	MED	1-5 years	City Funds and grants	Enterprise	\$12,000-\$15,000	City and Contractor	This will help alleviate only the 100 East Main Street problem.

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Insure that the water from Ashcreek Springs and the Ashcreek Drainage remain a quality source of culinary water.	Problem Identification: Ashcreek Springs has been contaminated by flooding from time to time.						
	Action: Protect the spring source and install and maintain anti-backflow valves.	HIGH	Ongoing	Local governments and possible grants	Hurricane	Undetermined	Hurricane City Public Works, LaVerkin City Public Works, Contractor	Hurricane City has experienced contamination of the culinary water system due to flooding during heavy rain storms in the Ash Creek Drainage. Ongoing maintenance of facilities needs to be done to protect the source.
	Objective W26.1 Reduce flooding at the “Old Town” drainage area located between 200 East and 200 West.	Problem Identification: There is flooding in the “Old Town” area of Ivins.						
	Action: Create a Special Improvement Project for storm drainage and roadway improvements.	HIGH	Ongoing	Special Improvement District	Ivins	\$2,046,000	Ivins City	This will eliminate flooding to the homes in the area.
	Objective: Reduce flooding in the area 500 East and 600 West along Center Street.	Problem Identification: The roadway and homes on the south side of Center Street between 500 and 600 East in Ivins floods with mud and debris.						
	Action: Retain storm water in the street.	HIGH	On-going	Special Improvement District	Ivines	\$15,000	Ivins City	Construct settling ponds off of Center Street, increase the size of boxes, and divert water along the street through construction of curb and gutter.
	Objective: Preventing flooding in area near 200 West and 100 North.	Problem Identification: Area around 200 West and 100 North subject to flooding from storm runoff.						
	Action: Upgrade and expand storm drain system. Keep said systems clear and clean.	HIGH	Ongoing	Local governments	LaVerkin	To be determined	LaVerkin City	Upgrading and expanding the storm drain system and ensuring it is kept clear will eliminate flooding to the homes in the area.
	Objective: Reduce flooding threat in portions of New Harmony.	Problem Identification: Flooding in the Prince Subdivision is a problem.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Acquire a sandbagging machine along with empty bags and sand.	HIGH	Immediate	Local governments	New Harmony	\$1,500-\$2,000	Residents, Boy Scouts, Other volunteers	Flooding has been a problem in the Prince Subdivision since the subdivision was developed prior to New Harmony adopting a Subdivision Ordinance and Zoning Ordinance. Other developed areas in town are also subject to occasional flooding. Having ability to fill sandbags will provide short-term solution to preventing damage to residences.
	Objective: Reduce flooding threat in New Harmony.	Problem Identification: Flooding throughout town caused by clogged channels and bridge openings in town.						
	Action: Maintain channel and bridge openings in town.	HIGH	Ongoing	Local governments	New Harmony	Unknown, Minimal to moderate	Residents	If the drainages in and around the Town are kept clear on an ongoing basis the likelihood of flooding is diminished.
	Objective: Reduce flooding threat in New Harmony.	Problem Identification: Specific flooding threats throughout town have not been quantified and thoroughly studied by a qualified engineering professional.						
	Action: Commission an engineering study to determine the feasibility of implementing flood and drainage control measures for the town of New Harmony.	HIGH	6 months to 1 year	Local and grant funds (unknown source)	New Harmony	Approximately \$15,000 (local \$1,000; grant \$14,000)	Town staff and Consulting Engineer	Project will include floodplain mapping and study to determine specific flood threats in town.
	Objective: Reduce flooding threat in New Harmony.	Problem Identification: Problems quantified in engineering studies need to be implemented to alleviate flooding problems in town.						
	Action: Implement flood control project(s) identified by consulting engineer to reduce flooding in town.	HIGH	1-1 ½ years	Grant from unknown source	New Harmony	\$70,000-\$100,000	Contractor	Specific flood control projects will not be able to be identified until engineering studies determine what needs to be done.
	Objective: Reduce flooding threat in Rockville.	Problem Identification: While the Virgin River poses a potential flood threat to the community, the drainage ditches from the tops of the surrounding plateaus represent a real flood hazard.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Keep ditches clean.	HIGH	Immediate and ongoing	Local governments	Rockville	Minimal	Town personnel, residents	Not much can be done by the community to lessen the threat of the Virgin River, but the town can ensure that the ditches in town are kept free from obstructions.
	Objective: Reduce flooding threat in St. George.	Problem Identification: Heavy rains in the City limits along the drainages can cause problems by damaging homes and property by overflowing of the Santa Clara and Virgin Rivers.						
	Action: Clear debris and other material from riverbeds.	HIGH	Within 2 years	None	St. George	Use volunteer groups or persons performing mandated civic time.	City personnel, volunteers	Homeowners and other small groups can be responsible for areas near their homes.
	Objective: Reduce flooding threat in St. George.	Problem Identification: The Santa Clara River and Virgin River cannot carry capacity due to silt build up.						
	Action: Dredge out river bottoms.	HIGH	5 years	Federal government	St. George	Unknown	U.S. Army Corps of Engineers	Dredge these two river channels. The Army Corps of Engineers has worked on the Fort Pierce River (Wash) in the past.
	Objective: Improve drainage conditions along Pecan Drive in Toquerville.	Problem Identification: There are drainage problems along Pecan Drive.						
	Action: Install curb and gutter on Pecan Street.	HIGH	3 months	Class C road funds and general funds	Toquerville	\$60,000	City Staff, contractor	Improving Pecan Street will control water flow and protect residences.
	Objective: Improve drainage along S.R 17 in Toquerville.	Problem Identification: There are drainage problems along Pecan Drive.						
	Action: Install additional drain pipe.	MED	3 months	Class C road funds and general funds	Toquerville	\$60,000	City Staff, contractor	Some work has been done by Toquerville City. Additional issues need to be addressed.
	Objective: Resolving drainage issues in Chola Creek Subdivision.	Problem Identification: There are drainage problems in the Chola Creek Subdivision.						
	Action: Implement the drainage work needed in the subdivision.	MED	Immediate	Private developer	Toquerville	Unknown	Private developer	Toquerville City is currently working with the land owner regarding drainage situation in the subdivision.

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Reduce flooding threat in portions of the town of Virgin.	Problem Identification: The sites identified for greatest risk is the property located at the 101 Rancho area, the Zion River RV Park, the North Creek area, and other property along the Virgin River flow.						
	Action: Clear debris and other material from waterways.	HIGH	Ongoing	Local government and possible grants	Virgin	To be determined.	Virgin town and any other professional assistance needed.	Keeping the waterways clear of sludge buildup will help protect portions of the town from flooding.
	Objective: Reduce potential flood risks.	Problem Identification: Property owners/developers wanting to develop within flood plains of the Virgin River, Mill Creek, and along storm washes.						
	Action: Update FEMA Flood Insurance Rate Maps.	HIGH	5 years	Grants	Washington City	\$50,000	FEMA	FEMA flood maps are inaccurate and out of date. The City is experiencing development pressures along the floodplains. Funding of this activity would be positively pursued if grants are received. Otherwise may be cost prohibitive to update maps all at once.
	Action: Require Letter of Map Amendment (LOMA)/Letter of Map Revision (LOMR) for suspected inaccurate floodplains prior to development design.	HIGH	On-going	Developers	Washington City	Case by case	Developer's consulting engineers with review by FEMA and Washington City Community Development Department.	Allow developers to submit LOMAs/LOMRs to FEMA for approval for a more accurate delineation of floodplain and their design development. Property owners and developers may feel that this requirement for LOMAs/LOMRs may be too restrictive.
	Action: Do not allow development in the Virgin River and Mill Creek floodplains	HIGH	On-going	N/A	Washington City	N/A	Washington City Community Development Department	Do not allow major development in the Virgin River and Mill Creek floodplains, other than open space and recreational uses and possible floodplain stabilization.
Earthquake	Objective: Provide for emergency response and relief	Problem Identification: Transportation and utilities services could be severely impacted.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Identify and maintain critical transportation and utility services	HIGH	ongoing	Local governments and possible grants	La Verkin	Unknown-Determined by the extent of damage anticipated.	City staff.	Critical transportation systems need to be maintained.
	Objective: Raise awareness of problems that could occur as a result of an earthquake.	Problem Identification: Rockville is surrounded by rocky slopes and the Virgin River runs through the town. There is a high probability of rockfall caused by seismic events and possible liquefaction along the river areas.						
	Action: Maintain adherence to Land Use codes and restrictions to building in sensitive areas.	HIGH	Immediate and ongoing	Not applicable	Rockville	Not applicable	Town staff.	Some of the problems identified include falling rocks, diversion of the Virgin River due to landslides.
	Objective: Reduce threat to public safety during an earthquake.	Problem Identification: Damage to structures and utilities are likely during a seismic event.						
	Action: Retrofit inadequate construction.	HIGH	10 years+	Private	St. George	Extreme	City Inspection Department, City Engineering Department, Private Engineers.	Old and inadequate construction, buildings with un-reinforced masonry to be mitigated.
	Objective: Educate community on earthquake damage prevention practices	Problem Identification: Lack of public awareness about earthquake damage prevention practices.						
	Action: Produce and/or distribute handouts and provide inspections to identify shortcomings in earthquake preparedness.	HIGH	1 year+	None Identified	St. George	\$50,000	Fire Department, Inspection Department	Having a community with residents educated on earthquake damage prevention practices will ensure greater safety of City residents.
	Action: Educate the public on damage prevention practices for earthquakes	HIGH	2 years	Grants from state and Federal governments	St. George	\$50,000-\$75,000	Emergency Management and volunteers	Starting up a C.E.R.T. program in the St. George City area. Earthquakes are taught as being the biggest hazard facing those in the area. Teaching the C.E.R.T. class should get the message out to residents.
	Objective: Map all earthquake faults in Washington City and groundshaking hazard areas	Problem Identification: There are unmapped earthquake faults and ground shaking hazard areas.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Create a Geologic Hazards Map showing earthquake faults and groundshaking hazard areas.	HIGH	6 months – 1 year	City General Fund	Washington City	\$5,000	Consultants, Washington City Public Works and Community Development Depts.	Not all earthquake faults within the city have been mapped. For public safety, need to map faults and areas that could be impacted with rockfall, etc. due to groundshaking. The map will be a guide for siting homes and buildings
Drought	Objective R9.1 Conserve culinary water	Problem Identification: Cyclical periods of drought place a strain on community culinary water resources.						
	Action: Educate the public on the need to be water wise	HIGH	Ongoing	City funds	Enterprise	Minimal	Water purveyor and newsletter editor	Use a newsletter to educate the public
	Action: Maintain and enforce rate policies that encourage water conservation	HIGH	Ongoing	City funds	Enterprise	Minimal	Water purveyor and newsletter editor	The City should continue to maintain and implement a tiered water rate structure.
	Objective: Meet current and future water needs of community	Problem Identification: Cyclical periods of drought place a strain on availability of community culinary water and irrigation water resources.						
	Action: Develop additional source and storage as well as implementing conservation plans	HIGH	Ongoing	City funds, State and Federal Government loans and/or grants	Hurricane	To be determined	Hurricane City Staff, Professional Services, Contractors	Hurricane is in a desert climate and has experienced several years of drought conditions. To meet the needs of the community’s residential and business water users, vigilance in locating new and additional sources as well as increasing storage capacity to meet current needs as well as future need is a must.
	Objective: Meet current and future water needs of community	Problem Identification: Limited water supplies, increasing population and several years of drought place a strain on availability of community culinary water resources.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Develop additional source and storage as well as provide ongoing plans and education.	HIGH	Ongoing	City funds and possible grants	LaVerkin	To be determined	Water and Public Works Departments	LaVerkin has experienced several years of drought conditions. Source supply and storage need to keep pace with population growth. An education program needs to be implemented to educate water users on methods to conserve available water resources.
	Objective: Conserve irrigation water by improving the area of irrigation water delivery and efficiency.	Problem Identification: Currently the Rockville Ditch and Pipeline Companies provide water to most areas of town. Because of its design, the system is not as efficient as it could be.						
	Action: Determine how the irrigation delivery system could be improved to provide comprehensive service as well as more efficient means of delivery.	HIGH	Ongoing	Private irrigation companies	Rockville	To be determined	Irrigation water purveyor	Rockville has experienced several years of drought conditions. The distribution of irrigation water in Rockville is by a combination of open ditches and non pressurized pipe. Not all properties in town can utilize this. A pressurized system is a consideration, however the cost of such a system may be high.
	Objective: Conserve culinary water through education and continued water conservation policies.	Problem Identification: Currently the Rockville Ditch and Pipeline Companies provide water to most areas of town. Because of its design, the system is not as efficient as it could be.						
	Action: Continue the practice of providing written educational materials with water bills and educational materials at the post Office/Community Center, etc	HIGH	Ongoing	Private irrigation companies	Rockville	To be determined	Irrigation water purveyor	A continued program of providing education on methods of water conservation will help ensure adequate supply of culinary water.
	Objective: Excessive water used for landscaping	Problem Identification: Limited water supplies, increasing population and several years of drought place a strain on availability of community culinary water resources.						
	Action: Develop and enforce policies to limit the amount of area that can be used as water requiring landscape.	HIGH	Ongoing	None	St. George	To be determined	City Planning Staff	St. George City removed water-requiring landscape from around the City office building and replaced it with water conserving desert landscape. This should be encouraged throughout the city where appropriate.

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Objective: Reduce use of culinary water	Problem Identification: Limited water supplies during the extended years of drought have placed a strain on availability of community culinary water resources.						
	Action: Continue to enforce policies to reduce water usage.	HIGH	Ongoing	None	Toquerville	None	City staff	In 2003, Toquerville implemented a mandatory even/odd day watering schedule between June 1 st and October 31 st .
	Objective: Conserve water resources.	Problem Identification: Community is suffering, as is all of southwestern Utah through and extended, severe drought.						
	Action: Enforce existing City water conservation ordinance.	HIGH	On-going	N/A	Washington City	N/A	Washington City Public Works Department	The City has already adopted a water conservation ordinance.
	Action: Adopt a time-of-day outdoor watering ordinance.	HIGH	Spring 2004	N/A	Washington City	N/A	Washington City Public Works Department	The existing water conservation ordinance does not include provisions for designated times in which outdoor watering should take place
	Action: Create new water sources.	HIGH	20 years	Bonding/City	Washington City	\$1,000,000 or more	Washington City Public Works Department/C consultants	The City needs to identify new water resources for its increasing population and to better plan for future periods of drought. Difficulties may be that some citizens do not approve of the City committing to additional bonding.
Problem Soil	Objective: Lessen the risk to buildings from collapsible soils	Problem Identification: South Fields area has collapsible soils.						
	Action: Require soils testing prior to building and following engineer's requirements	HIGH	Ongoing	Local Government and possible grants	Hurricane	To be determined	Building Department, City Engineer, Public Works	The South Fields area of the community is located on a dry lake bed. Sink holes have developed in areas where no testing and mitigation has been completed.
	Objective: Lessen the risk to buildings from problem soils	Problem Identification: The Rockville Sensitive Lands Overlay Map has identified problem areas such as slopes, flood plains and wetlands.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Restrict building in areas identified as having problem soils	HIGH	Ongoing	Town funds	Rockville	Minimal	Town, Engineering Consultant	The overlay map identifies likely problem areas. Site-specific studies would identify risks and issues specific to a given parcel.
	Action: Maintain land use code chapters dealing with sensitive lands	HIGH	Ongoing	Town funds	Rockville	Minimal	Town, Engineering Consultant	The town has codes on the books. These need to be enforced and amended as needed.
	Objective: Reduce potential building foundation settling risks.	Problem Identification: Expansive soils are found throughout the City.						
	Action: Enforce existing City ordinances requiring geotechnical studies and require recommended mitigation measures from studies.	HIGH	On-going	Developers	Washington City	Case by case	Developer's consultant's with review by Washington City Public Works and Community Development departments.	All developments require geotechnical studies to ensure stable foundations for buildings. There are many areas of expansive soils throughout the City.
Severe Weather	Objective: Reduce damage to structures through strict adherence to building codes	Problem Identification: Enterprise experiences occasional, damaging high winds.						
	Action: Ensure that 80 MPH wind load requirement is met by builders	HIGH	Ongoing	Building permit fees	Enterprise	Minimal	Building Inspector	Adherence to building code requirement for tying roof structures to supporting walls will minimize damage from high wind events
	Objective: Reduce service disruptions and damage to power lines	Problem Identification: Power lines are at risk from seasonal high winds.						
	Action: Provide adequate clearances for power lines and conduct ongoing line maintenance. Maintain outage plan.	HIGH	Ongoing	Hurricane City Power, Possible Grants	Hurricane	To be determined	Hurricane City Power, 138 Task Force	Extreme winds have occurred, utilities disruption has occurred in past years due to damage to power poles and transmission lines by high winds.
	Objective: Provide adequate clearances for power lines	Problem Identification: Power lines are at risk from seasonal high winds.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Conduct regular line maintenance.	HIGH	Ongoing	Local government and possible grants	LaVerkin	To be determined	Water and Public Works Departments	Occasional severe seasonal winds pose risk of damage to power poles and transmission lines by high winds.
	Objective: Reduce structural damage from windstorms, occasional hailstorms.	Problem Identification: Periodic severe thunderstorms and occasional periods of rain over several days cause flooding. Severe windstorms and occasional hailstorms cause structural damage.						
	Action: Assure adherence to building codes.	HIGH	Ongoing	Building Permit Fees	New Harmony	Minimal, by builder	County Building Department	Due to its geographic location the town is subject to occasional severe windstorms and thunderstorm activity with associated hail.
	Objective: Improve electrical power system reliability by reducing risk from damage by trees falling in windstorms.	Problem Identification: Strong winds can cause trees to fall on power lines, causing power outages						
	Action: Prune trees back from power lines.	HIGH	3 year plan	City Power Department	St. George	Not determined, minimal to moderate	City Power Department	Due to its geographic location the town is subject to occasional severe windstorms and thunderstorm activity with associated hail.
	Objective: Improved public awareness about flood hazards in the community.	Problem Identification: Occasional heavy rains bring problems with flooding						
	Action: Prepare educational materials and presentations about “100 year flood events” that occur in the area. Distribute this information and/or conduct educational programs for the public.	MED	2 years	City/FEMA/Army Corps of Engineers	St. George	Minimal	Can be done through the CERT program	Most people are not aware of what the term “100 year flood event” or building in a100 year flood zone really means.
	Objective: Reduce service disruptions and damage to power lines	Problem Identification: Power lines are at risk from seasonal high winds.						
	Action: Ensure that adequate clearance for power lines is provided and conduct ongoing line maintenance through Utah Power.	HIGH	Ongoing	Commercial power provider	Virgin	To be determined	Utah Power employees	Occasional strong winds have caused utilities disruption due to damage to power poles and transmission lines by high winds.
Insect Infestations	Objective: Reduce the impact of insects	Problem Identification: South and west sides of the City are occasionally vulnerable to Mormon Cricket and Cutworm infestations as well as some mosquito problems.						

WASHINGTON COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	Action: Spread insect bait and spray for mosquitoes	HIGH	When required	City and County funds. Mosquito abatement funds come from property tax.	Enterprise	Approximately \$3.00 per property owner per month	County Mosquito Abatement District	
	Objective: Reduce the severity of infestations	Problem Identification: Periodic Grasshopper infestations more severe on edge of developed town area and in field surrounding town.						
	Action: Conduct aerial spraying to reduce infestations	HIGH	As infestations occur	By private individuals in most cases	New Harmony	Varies, depending on acreage treated	Contractor	New Harmony is surrounded by many agricultural fields. These have been subjected to insect infestation especially during the recent years of drought.

WAYNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Flood	Span culinary water lines over Sand Creek to avoid flood damage to lines.	Medium	Torrey Town, Wayne County EM	Town, County, State, Federal	Torrey Town, Wayne County	Unknown	Depends on Funding	Decreased risk of damage to culinary water lines due to flooding.
Flood	Construct culverts to prevent washing out north of Bicknell.	Medium	Bicknell Town, Wayne County EM	Town, County, State, Federal	Bicknell Town, Wayne County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Install larger pipe on Bull Creek in Hanksville Town.	Medium	Hanksville Town, Wayne County EM	Town, County, State, Federal	Hanksville Town, Wayne County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Upgrade flood dyke that drains into Bull Creek.	High	Hanksville Town, Wayne County EM	Town, County, State, Federal	Hanksville Town, Wayne County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Improve drainage system to prevent flooding in Hanksville Town.	Medium	Hanksville Town, Wayne County EM	Town, County, State, Federal	Hanksville Town, Wayne County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Construct new reservoir to prevent flooding in Lyman Town.	Medium	Lyman Town, Wayne County EM	Town, County, State, Federal	Lyman Town, Wayne County	Unknown	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Improve High Line Ditch to increase its flood capacity	Medium	Lyman Town, Wayne County EM	Town, County, State, Federal	Lyman Town, Wayne County	\$300,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Flood	Construct a mile long deflector levee.	Medium	Lyman Town, Wayne County EM	Town, County, State, Federal	Lyman Town, Wayne County	\$300,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Multihazard	Public Education to mitigate casualties.	High	Schools, Emergency Mgmt. (EM) in Six County Region	Counties, State, Federal	Entire Six County Region	\$200,000/yr.	Ongoing	Increased ability to educate public of hazard risks and preparedness.

WAYNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Multihazard	Educating Community Emergency Response Teams (CERTs).	High	EM in Six County Region, CERT Trainers	Counties, State, Federal	Entire Six County Region	\$18,000/yr.	Ongoing	Increased ability to educate first responders of hazard risks and preparedness.
Multihazard	Update Zoning Ordinances to prevent development in identifiable hazardous areas.	High	EM and County Planning Staff in Six County Region	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Prevents property damage and casualties due to hazards at moderate cost.
Multihazard	Join National Weather Service Strom Ready program.	Medium	EM in Six County Region	Counties NOAA	Entire Six County Region	Minimal	3 years	Participating jurisdictions will be ready for severe weather
Earthquake	Seismically retrofit culinary water pipeline to withstand earthquake.	Medium	Levan Water Company	Unknown	Levan Town and Juab County	Unknown	Depends on Funding	Levan will still have adequate water after earthquake strikes.
Earthquake	Identify and Retrofit high risk public buildings and churches to prevent earthquake damage.	Low	EM in Six County Region, Building Inspectors	Cities, Towns, Counties, State, Federal	Entire Six County Region	\$400,000,000	Depends on Funding	Will minimize property damage and casualties due to earthquake.
Flood	Adopt a No Special Flood Hazard Area (NSFHA) ordinance for certain municipalities outside of any floodplain.	Medium	Municipalities and Counties affected	Cities, Towns, Counties, State	Centerfield Town, Lynndyl Town	Unknown	Depends on Funding	Enables those municipalities at low risk to flood to concentrate on mitigating other hazards.
Flood	Evaluate and flood proof at risk buildings, particularly critical facilities.	Medium	Municipalities and Counties affected	City, Town, County, State, Federal	Fayette Town, Fountain Green City, Rocky Ridge Town, Wales Town	\$70,000	Depends on Funding	Decreased risk of property damage and casualties due to flooding.
Landslide	Monitor landslide zones for movement threatening subdivisions to better warn inhabitants of danger.	Medium	EM in Six County Region.	Counties, State, Federal	Entire Six County Region	Unknown	Depends on Funding	Decreased risk of casualties due to landslides, enhanced warning for inhabitants.
Wildfire	Participate in the Utah Living with Fire Program. Particularly, at risk communities as identified in the National Fire Plan should be involved.	Medium	County Fire Wardens, FFSL, EM in Six County Region	Counties, State	Entire Six County Region	Minimal	2006	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Wildfire	County ordinances requiring defensible space, water source development, proper road width and escape routes in fire prone areas.	High	County Fire Wardens, LEPC, County Zoning Commissions	Counties, State	Hotspots throughout Six County Region	\$30,000	2005	Decreased risk of property damage and casualties due to uncontrolled wildfires.

WAYNE COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Project	Priority	Responsible Agency	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Estimated Completion Date	Benefits
Wildfire	Establish defensible space around forest and city structures, water source development, escape routes, and controlled burns.	High	Forest Service (FS), BLM, County Fire Wardens, State Forestry, Fire and State Lands (FFSL), LEPC, Homeowners Associations	National Fire Plan (NFP), Healthy Forests Initiative (HFI)	Hotspots throughout Six County Region	\$45,000,000	Depends on Funding	Decreased risk of property damage and casualties due to uncontrolled wildfires.
Dam Failure	Regularly monitor high hazard dams, strengthening them when necessary.	High	Local Water Companies, LEPC, Utah Department of Natural Resources (DNR)	Counties, Utah DNR, Federal	High Hazard Dams identified in each county annex.	Unknown	Depends on Funding	Increased ability to prevent dam failure and warn public of impending dam failure.
Drought	Develop additional water sources and storage as well as implement conservation plans.	High	Kanosh Band Water Company	State, Federal	Kanosh Band, Paiute Tribe of Utah	Unknown	Depends on Funding	Reduces risk of crop damage from drought.
Severe Weather	Plant trees west of towns at high risk of windstorms.	Medium	Towns, County EM	Towns, County, State, Federal	Hinckley, Lynndyl, and Oak City Towns in Millard County	Unknown	Depends on Funding	Reduces risk of damage and casualties due to windstorms.

WEBER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
Earthquake	OBJECTIVE: Reduce the impact of non-structural events following an earthquake	PROBLEM IDENTIFICATION: Non-structural hazards in the Weber County schools are a threat to students, facility, and employees and cause an increase in recovery activities following an earthquake.						
	ACTION: Develop and implement a manual similar to Salt Lake City school districts.	HIGH	Immediate	School Districts, State Earthquake Program Grant School Districts, County Emergency Management	Countywide	Minimal if using SLC School District template	School District	Train and exercise local school districts on the non-structural methods identified in the document.
	ACTION: Develop a training document for schoolteachers showing non-structural mitigation activities for classrooms.	HIGH	Ongoing	County Emergency Services, State Earthquake Program County Emergency Services, School District	Countywide	Minimal	School District, Emergency Management	Show methods, techniques, and equipment and associated costs for non-structural mitigation in the classroom.
	OBJECTIVE: Reduce the impact of non-structural events following an earthquake.	PROBLEM IDENTIFICATION: Critical facilities (public safety, utilities, water/waster water/sewer, schools, hospitals), need to be made less vulnerable from the impacts of earthquakes to allow to a more timely and efficient response and recovery.						
	ACTION: Develop an earthquake vulnerability study for identified critical facilities.	HIGH	Ongoing	County Emergency Services, (FEMA Grants)	Countywide	Unknown and dependent on scope of project.	County Emergency Services and other County/City Agencies	Identify critical infrastructure and rank accordingly to assist in upgrades to facilities.
	OBJECTIVE: Increased awareness of high liquefaction areas	PROBLEM IDENTIFICATION: Areas of high liquefaction (western Weber county: Hooper, Far West, West Warren, West Haven, Marriott-Slaterville, Plain City) are experiencing increased growth.						
	ACTION: Include current liquefaction maps on the County website.	HIGH	Within the year	County Emergency Services and County Engineer	Countywide	Minimal	County Emergency Services, County Engineer, GIS and Web	Public information on hazard and risk.

WEBER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	OBJECTIVE: Promote natural hazards ordinance limiting development in high-risk areas.	PROBLEM IDENTIFICATION: Development on identified fault traces increase the risk to life and property.						
	ACTION: Make available copy of county natural hazards ordinance for cities within the county.	HIGH	Within the year	County Emergency Services and County Engineer	Countywide	Minimal	County Emergency Services and County Engineer	Weber County has a Natural Hazard Ordinance to address development in high-risk areas. Cities within the County should be made aware of this Ordinance and hopefully implement the same regulatory ordinance in their community.
Flood	OBJECTIVE: Have federal flood insurance available within communities and adopt flood loss prevention ordinances.	PROBLEM IDENTIFICATION: Communities not involved in the NFIP.						
	ACTION: Encourage the communities of Washington terrace and Huntsville to participate in the NFIP.	MED	Ongoing	None Required	Countywide	None Required	State Floodplain Manager, City Officials, Building Officials	This will make FEMA review and identify flood hazards in the area and will allow for a more accurate flood risk assessment. It will also allow citizens to buy federal flood insurance.
	OBJECTIVE: Implement and fund identified stormwater projects to lessen impact of flooding in the county.	PROBLEM IDENTIFICATION: Stormwater issues continue to be a critical flood issue in the county.						
	ACTION: Include current stormwater plans and projects in hazard mitigation plan.	MED	Ongoing	Project specific, funding from County, Stormwater, State and Federal Programs.	Countywide	Minimal	County Stormwater, County Engineer	Weber County's Stormwater Program is actively involved and promotes sound land use planning and flood loss reduction activities. The long-term plan and identified projects will help alleviate flooding in the County and Cities within County. The County Master Plan has identified areas of concern and the "Regional Storm Water Management Plan" has addressed those areas with a detailed list of projects.
	OBJECTIVE: Evaluate canals in the county that may cause flooding.	PROBLEM IDENTIFICATION: Weber County has an extensive canal system and canal breach or overtopping has and will continue to create a significant flood threat.						

WEBER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Identify canals in the county that have the potential to cause damage due to flooding.	LOW	Two years	County Emergency Management, State Mitigation Program Grant	Countywide	Depends on scope of study	County Stormwater, County Engineer, County Emergency Services, State Hazard Mitigation Planner	City of Riverdale experienced a significant flood event from a canal breach. Other private canals may also be of concerns.
Severe Weather	OBJECTIVE: Reduce impact to life and property from severe weather related incidents	PROBLEM IDENTIFICATION: Most disaster declarations are generated from weather related incidents. Weber County continues to be impacted by snowstorms, hail, thunderstorms/lightning, tornados, heavy rain, and avalanche.						
	ACTION: Establish and support countywide National Weather Service Storm Ready program.	MED	Two years	County Emergency Management	Countywide	Minimal, some cost for weather radios	County Emergency Management, SLC NWS	This is a proactive public information program that allows communities to be recognized for many weather related activities they are already doing.
	ACTION 2: Identify areas of avalanche risk and develop and post signs for avalanche danger	LOW	Ongoing	County Emergency Management, County and City Planners, County and City Engineers, Road Dept/Public Works	Countywide	Minimal, for signs and placement of signs.	County/City Engineers and Road Dept./Public Works	Avalanche danger in areas of North Ogden Divide and in the Ogden Valley will continue to threaten lives and property as people move and travel into areas of risk.
Wildfire	OBJECTIVE: Reduce impact to life and property from urban interface wildland areas	PROBLEM IDENTIFICATION: Urban interface wildland fire continues to be of concern in areas of Uintah Highlands, Wolf Creek, North Ogden, and other areas of the Ogden Valley.						

WEBER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	ACTION: Develop and implement a strong land use ordinance that addresses fuel reduction in areas at risk from fire.	HIGH	Ongoing	County/City Emergency Management, Planning and Zoning, County and City Attorneys, Public Officials	Countywide	Minimal - Time and involvement.	County/City Emergency Management, Planning and Zoning, County and City Attorneys, Public Officials	Weber County and cities within the County continue to struggle with existing wildland fire interface communities such as Uintah Highlands. It is critical new developments in areas of risk are designed to lessen the impact from such fires.
	ACTION: Have communities participate in the Fire Wise Community programs.	HIGH	Ongoing	Forestry Fire and State Lands, US Forest Service	Countywide	Minimal - Time and involvement.	Contractors, County and City Fire, Local participation	Weber County and cities within the County continue to struggle with existing wildland fire interface communities such as Uintah Highlands. It is critical new developments in areas of risk are designed to lessen the impact from such fires.
Dam Failure	OBJECTIVE: Reduce the impact of catastrophic flooding due to dam failure	PROBLEM IDENTIFICATION: Dam failure from federal, state and private dams can impact Weber County. Debris basin type dams are of concern at Birch Creek, Glassman Way, and on Harrison Blvd.						
	ACTION: Re-evaluate current high hazard dams and evaluate use of early warning sirens to warn public.	MED	Ongoing	Local and State	Countywide	Unknown	County Emergency management	A catastrophic dam failure can impact a significant population in the County. Evaluating the risk and vulnerability will allow for a more efficient emergency response.
	ACTION 2: Identify and then fund dams needing armored concrete chutes.	MED	Unknown and based on funding	Local and State	Countywide	Unknown	Stormwater Management, County Engineer, State Engineer	A catastrophic dam failure can impact a significant population in the County. Armored concrete chutes are an approved structural mitigation measure.
Landslides	OBJECTIVE: Re-evaluate current landslide map	PROBLEM IDENTIFICATION: Weber County has significant areas of landslides.						
	ACTION: Update current landslide map and supporting data	LOW	Unknown and based on funding	Local and State	Countywide	Unknown	County and City Engineering	Current landslide maps include data that does not necessarily reflect areas at risk.

WEBER COUNTY NATURAL HAZARD MITIGATION PROJECTS								
Hazard	Objective/Project	Priority	Time Frame	Possible Funding Sources	Jurisdiction Affected	Estimated Project Cost	Responsible Agency	Background
	OBJECTIVE: Monitor landslide movement in areas that impact infrastructure and population.							
	ACTION: Evaluate landslide areas where parameters can be used	LOW	Unknown and based on funding	Local and State	Countywide	Unknown	County and City Engineering, UGS	Area of Bear Hollow and the mouth of Weber Canyon have active landslides and can impact roads and population.